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THE DIARRHEAS OF INFANCY.*

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The relatively recent work in the classification, diagnosis and treatment of these common ailments is the author's justification for the presentation of this paper at this time. That this work has been well worth while is proven by the fact that the decrease in infant mortality during the past decade has been one of the shining marks to the credit of modern medicine.

The infantile diarrheas may be fairly well grouped into three general classes:

First—The Simple Diarrheas, due to intestinal indigestion, usually mild in type, with no toxemia, and readily corrected by a proper diet.

Second—The Infectious Diarrheas, which include not only the bacillary dysenteries and cholera infantum, due to infection from without, but also those nonspecific infections due to invasion by bacteria normally present in the intestinal tract, but which give rise to illness only under certain conditions of improper feeding.

Third—The Mechanical Diarrheas, due to some gross indiscretion in diet or to the too frequent use of cathartics. Under this heading might be also placed the diarrhea resulting from intussusception.

The above classification differs materially from that of the German or Finkelstein school, but is perhaps simpler and more in accord with American ideas.

The Simple Diarrheas may be further subdivided into three etiological groups, viz:

Intestinal Indigestion from—

First—Some particular element of the food (sugar, fat, starch, protein).

Second—Overfeeding.

Third—Underfeeding.

These may occur alike in breast- or bottle-fed babies and make up the great majority of the diarrheas of breast-fed infants. They are not accompanied by fever and the diarrhea is seldom severe. The stools seldom exceed four to eight per day, are fecal in character, although some mucus is generally present. The color is not characteristic, being yellow, gray, green or brown, and probably varies depending on the particular food element at fault. The infant's nutrition is not markedly affected, although the weight curve almost always shows stationary or a gradual fall. There is usually some vomiting.

It is not always possible to differentiate the cases due to fat intolerance or sugar intolerance from those due to some other element in the food, and it is probably a fact that an indigestion due primarily to any one part in the food mixture so lowers the digestive function that most of these cases are clinically an indigestion of several or all of the elements. However, in these cases where the sugars are at fault, the stools are generally loose, foamy and bright yellow or green, while an intolerance of the fats is more apt to cause gray, pasty or putty-like stools with many fat curds present. Fortunately the inability to designate the particular food element at fault makes no difference as to the proper therapeutic measures to be used.

In bottle-fed babies under the care of physicians, the more or less general adoption of whole milk mixtures and the modern tendency to fix a safe limit on the sugar content has materially reduced the number of cases of improper feeding, but unfortunately too many babies are yet fed on the high carbohydrate proprietary foods, according to home-made or advertised formulas, and sugar and starch indigestions still play an important role in the production of infantile diarrheas.

In Type 2, due to overfeeding, the symptoms are practically the same as already noted. In bottle-fed cases, a careful study of the feeding history with notation of not only what the baby has been fed on, but how much and how often, taken in connection with the previous and present weight record and estimated caloric needs of the baby, will usually tell the story of overfeeding for a considerable period of time. Many of these cases give a history of a rapid gain in

*Read before the Fiftieth Annual Meeting of the Florida Medical Association, held at Jacksonville, May 15, 16, 1923.

weight for a time prior to the development of the diarrhea.

Type 3.—The diarrheas from indigestion as a result of *underfeeding* are frequently incorrectly diagnosed and consequently incorrectly treated. In this type, while the stools may be relatively frequent, they are usually small, often mere stains. The patient is fretful and does not sleep well and the temperature is apt to be subnormal. The feeding history, taken in detail as noted above, shows that there has been a marked deficiency in the food requirements for a considerable period of time. The experience of the author is that many such cases originate from the fact that the mother was not sufficiently instructed concerning the need for increased food to take care of increased weight, and, consequently, infants were kept for months on formulas given for a baby of a few weeks of age, or, that following some digestive disturbance and a consequent reduction of the food, the physician or mother have been too hesitant about increasing the food value to where it should be.

As mentioned earlier in this paper, the diarrheas due to intestinal indigestion from overfeeding, underfeeding, or improper feeding make up the great majority of the cases in breast-fed infants. It is particularly necessary that they be properly diagnosed and properly treated because it is still a too common practice to take a baby permanently from the breast because of frequent loose stools for a few days. A diagnostic procedure that is often of value is to weigh the baby just before and after each feeding for a day or two to see how much the infant is really getting. This will give worth-while data in overfeeding and underfeeding cases. The treatment is obvious. In the cases from overfeeding, either reduce the length of time at the breast to five or ten minutes or lengthen the intervals between feedings to four hours, or both. Sometimes stopping all nursings for twelve hours will be advantageous. In cases from underfeedings, regular nursing hours, rest and improved hygiene and diet for the mother, stripping the breasts after nursing as advised by Sedgewick and, if necessary, complementary bottle feedings after each nursing will almost surely cause a notable improvement within a short time.

In bottle-fed infants the treatment for all three types is entirely a matter of diet and the formula which will be found most generally satisfactory is skimmed milk 1/3 and water 2/3 (or ½ and ½), boiled together for three to five minutes and given without sugar. (Saccharin may be used ½ grain to the pint.) The feeding interval should usually be three hours and 3 to 8 ounces, according to age, given at each feeding. The usual method of figuring amounts is to give one ounce more per feeding than the infant's age in months, with a minimum of 3 and a maximum of 8 ounces. Just as soon as the diarrhea is controlled, the formula should be gradually increased by discontinuing the skimming, adding malt sugar and increasing the milk, until we have met the caloric needs of the particular baby under treatment. Since this gradual return from a special formula used for therapeutic purposes to the proper formula for a baby of given history, age and weight will apply in the dietetics of practically all classes of diarrhea, it will be discussed more at length at the conclusion of this paper.

Class 2.—The Infectious Diarrheas include, first, the true dysenteries due to the Shiga, Flexner, or colon bacillus and sometimes to streptococcus; second, cholera infantum; and, third, the Fermentative and Putrefactive types.

In dysentery the source of infection is "bad" milk or other infected food or drink. The onset is sudden with high temperature (103 to 106°), frequent vomiting, rapid emaciation and frequent stools (ten to twenty or more per day) with the early development of tenesmus. The stools are fecal at first, but very soon contain quantities of mucus and blood. The infant appears and is seriously ill almost from the onset. In a few days there is marked emaciation with the pinched facies, sunken fontanelles and other evidences of dehydration. The patient is usually very irritable or stuporous, frequently one condition alternating with the other.

The treatment generally advised is a cathartic (salts or oil) followed by a 24- to 48-hour fast with water given freely by mouth, or in extreme cases salt solution by hyperdermoclysis or intraperitoneally. Some authorities advise 1 drachm of saturated solution of magnesium sulphate every three or four hours or three times a day until blood disappears from the stools. Gastric lavage is sometimes necessary to control vomiting. Colon irrigations may be tried, but are usually difficult to give satisfactorily and causes much pain on account of the tenesmus. Stimulants — whiskey and strychnine — are usually indicated.

The diet after the first initial fast should be cereal gruels for three days or perhaps longer. It has been found that pure carbohydrate diet tends to stimulate the fermentative bacteria and produce an acid intestinal content which condition is unfavorable for the growth of the dysentery bacilli. These cases are always difficult to handle and generally run a protracted course of fifteen to twenty-eight days.

Cholera infantum has been grouped here with the infectious diarrheas, for although, as yet, no bacteria have been isolated as its direct cause, the disease has a very definite clinical entity and is most surely due to some bacterial contamination of the milk or other food. There is a sudden onset with high temperature (103 to 106°), frequent vomiting and rapid prostration. The stools are very frequent, twenty to forty per day, and early become almost pure serum and mucus (rice-water in appearance). Blood is *not* present.

The rapid loss of body fluids results in early collapse, often with coma, and death may occur in twelve to forty-eight hours from the onset.

The treatment is, first, oil or salts, if the case is seen very early, or, if this is vomited as will usually be the case, gastric lavage and colon irrigation. Fluids must be given freely as directed in dysentery and stimulants are demanded. The diet after twenty-four hours should be the same as in dysentery, e. g., a pure carbohydrate gruel.

The fourth class of the infectious diarrheas are the fermentative and putrefactive types. The etiology of these has been attributed by the Finkelstein school to indigestion or intoxication from the carbohydrates or proteins, respectively, but Kendall's studies of the intestinal bacterial flora has shown that, while it may be that some cases classified under this head are simple food disturbances, the great majority are due to fermentative or putrefactive bacteria, which are normally present in the intestinal tract and which become actively virulent in the presence of high carbohydrate diet in the one case, or high protein and low carbohydrate diet in the other. The carbohydrates are protein sparers and in the presence of a well-balanced diet it is probable that bacterial activity does not harm, but, theoretically, when there is a high carbohydrate diet the fermentative bacteria choke out the putrefactive type and fermentative diarrhea results. Per contra, if the infant is fed for a considerable period on low carbohydrates and high proteins, the putrefactive bacteria become virulent and a putrefactive diarrhea follows.

In both of these types there is fever 100 to 103°; the diarrhea is of moderate severity, the stools seldom exceeding ten or twelve per day, and do not contain blood. The nutrition is only moderately affected. Vomiting is not common and never frequent. In the fermentative type the stools are sour-smelling, loose and foamy, usually bright yellow or green in color, distinctly acid and irritant to the skin in reaction; while in the putrefactive type they are less frequent (four to six), often firm, foul or putrid in odor, usually brown or clay-colored and of a definite alkaline reaction.

The treatment of these two conditions is obvious. In both an initial purge of castor oil may be advisable, especially if there is much toxemia, followed by a twelve- to twenty-four-hour fast, water alone being given. If the case is not seen in the earliest stage, the purge is better omitted and the starvation limited to twelve hours or left off entirely. The rest of the treatment is entirely dietary. The milder fermentative cases should be put on 1/3 milk and 2/3 water, without sugar or starch, and if there is no improvement in forty-eight hours the case should be put on protein milk. The severer cases had better be put on protein milk from the start. (The author has found protein milk made with the proprietary casein preparations is very satisfactory and easy to handle.)

The putrefactive type should be put on cereal gruels (barley, arrowroot, flour, etc.) for two to four days, and then on weak milk formula diluted with the cereal gruel (1/3 milk and 2/3 gruel). In both of the types an effort should be made to approach the normal diet just as soon as the symptoms have disappeared, because it is perfectly possible for persistence in the corrective diet to switch one type into the other. It must be also remembered that, while it is necessary to temporarily disregard the caloric needs of the infant in order to correct a definite disturbance, the resulting diet is almost sure to be unbalanced and insufficient. An especial caution is necessary with regard to the long-continued use of starch or cereal gruel feedings, and some of the infant hospitals and feeding stations now make it a rule to add 1/3 or 1/2 milk on the fourth day even if diarrhea is not checked and the milk has to be left off for the fifth and sixth days.

The third and last general class of diarrheas is here designated as mechanical. This includes the diarrheas from gross indiscretions in diet such as the feeding to infants of bananas, uncooked starches or other obviously indigestible substances. The onset of attacks from this cause are usually abrupt with vomiting and abdominal pain preceding the actual onset of diarrhea. The temperature is usually considerably raised at first, but drops very soon after thorough purgation. The number of stools varies from none to a dozen per day and contain undigested food and mucus. The infant, while acutely ill for a few hours or a day, recovers normal health very quickly. The treatment is a dose of castor oil followed by twenty-four hours of starvation.

Type 2 of the mechanical diarrheas is due to the too-frequent use of cathartics. The diagnosis and treatment are obvious.

Type 3 of this class is the diarrhea from intussusception. This is purely a surgical condition and is mentioned in this paper only because of the necessity of differentiating it from the bloody dysenteries. The onset of both intussusception and dysentery is usually acute, with vomiting and the early appearance of blood in the stools, but in intussusception there is no high temperature and the stools are nothing but blood and mucus, or if there be any fecal particles present, they are always mixed or coated with blood. The chief diagnostic points in intussusception are the presence of the sausage-like tumor in the abdomen, the ability to feel the intussusceptum by rectal examination and the fact that, following this rectal examination, there is a gush of pure blood as the finger is withdrawn.

In the treatment of all classes and types of diarrhea it is usually wise to give sodii bicarbonate by mouth or rectum in sufficient amounts to keep the urine alkaline and prevent the development of acidosis or ketosis, as it is now called.

We have several times referred in the preceding pages to the necessity of getting our patients gradually back to a normal or near normal diet as soon as it is safe to do so. It has been the author's custom to note on the case record not only the diet prescribed for the correction of the diseased condition, but, at the same time, to record the estimated caloric needs of the baby and note the ideal or ultimate formula to meet such needs. For this purpose the cases are divided into three classes:

First—Babies under 4 months of about normal weight for their age.

Second—Similar babies over 4 months.

Third—Emaciated babies of any age.

In considering the normal the birth weight must always be taken into consideration. For the first class, e. g., normal babies under 4 months, 40 to 45 calories per pound per day is figured as the average requirement; for the second class, 50 to 55 calories, and for the third, 60 to 75 calories. For babies under 10 pounds, 1 ounce of sugar per day is estimated as the maximum, while for babies over 10 pounds 1½ ounces is allowed.

With the temporary as well as the ideal formulas before us, it is not difficult to progress gradually from one to the other, beginning the increase as soon as our judgment permits and moving up as fast as can be without overtaxing the tolerance of the patient.

This brief resume of the diarrheas of infancy cannot go into the details of diagnosis or treatment, but it is our hope that it will give a basis for both.

In conclusion I wish to give credit to the Pediatric Department of the New York Post-Graduate Medical School and Hospital, and more particularly to Drs. Dennett and De Sanctis for the general principles of classification, etc., given here.

SAFEGUARDING PROSTATECTOMY.*

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The treatment of benign hypertrophy of the prostate is entirely surgical. Of all men past 50 years of age 65 per cent have prostatic hypertrophy and of this number 35 per cent require treatment.

The advancement made in the treatment of this 35 per cent does not warrant the present attitude of the medical profession towards operative procedure. There seems to be a well-established idea among most medical men that the removal of a benign prostatic hypertrophy is a procedure of last resort and should not be instituted until such a time as would permit of the excuse, "he would have died anyway," appears as a very plausible alibi.

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The size of the hypertrophy as felt by the rectum is very often of little value where the prostate is small and is certainly a very poor way to make a diagnosis.

The symptoms of hypertrophy of the prostate are essentially those of mechanical interference to the urinary stream. Frequency of urination, nocturnal at first, is usually the primary indications of the disease, and difficulty of urination, pain and bleeding soon follow.

All these symptoms are the result of residual urine. Then these symptoms or when residual urine is found, no matter what the rectal examination may define as to size, the indication for interference is patent.

The procrastination at this time leads on to added infection both of the bladder and kidneys, and undoubtedly complicates the situation.

The dangers attending prostatectomy are hemorrhage, myocardial failure and uremia. Bleeding has not been a complication at the Bayside Hospital. The bleeding has been prevented in a great measure by the preliminary suprapubic drainage. Undoubtedly placing the prostate at complete rest reduces the bleeding to a minimum.

The careful dissection of the prostate, keeping well within the capsule so as not to interfere with the prostatic plexus, is certainly an aid. If bleeding does occur, it is not difficult to control it by suture of the bladder wall.

The myocardial failure is a serious complication and is usually precipitated by the great amount of back pressure and its direct effect upon the kidneys. To combat this condition we have found it advisable to call in our internest at the outset and have him institute such measures as he deems advisable.

Fortunately, Dr. Bitzer, head of the Division of Medicine of the Bayside Hospital, has taken a considerable amount of interest in this class of heart conditions, and through his care we have been able to combat this complication. I hope he will be good enough to discuss this particular feature.

The most serious of all complications and one that is always present is uremia. Uremia is the direct result of back pressure and inevitably will lead to a fatal issue unless properly and adequately controlled. The amount of uremia is in direct ratio to the amount of residual urine present and, of course, is increased by the presence of infection. It is obvious then that the ideal means of controlling the serious results of uremia is the early recognition of the disease and immediate operative interference.

Now, uremia being present in all these cases, with the mechanical block of the urethra producing back pressure, the cause of uremia, a preliminary side-tracking of the urethra is obviously the proper procedure.

It is routine at the Bayside Hospital for this class of cases to have determined by blood chemistry the amount of urinary retention. In all cases we do a preliminary suprapubic cystotomy under local anesthesia and establish continuous bladder drainage.

The patient is placed upon a low protein diet and the amount of protein given depending upon the amount of retention. Special care is taken of the bowels and skin, and as early as possible the patient is up and walking.

Blood examinations are made from time to time, and when the blood urea, uric acid and creatinine are approximately normal, and not until then, do we consider the enucleation of the prostate as feasable. The uremia having been cleared, the infection if present controlled and adequate means instituted to combat myocardial complications, then are we prepared to operate.

The final operation is either done under local or under nitrous oxide gas. The operation is done with a minimum loss of time. A large Freyer tube is anchored in the bladder and removed in twenty-four hours. The patient is permitted to be up as early as is consistent, usually in three or four days.

The wound heals by granulation and the urinary act is restored within a period of two or three weeks.

CASE REPORTS.

Case No. 2249, a retired farmer, 77 years old, with a negative venereal history, was brought into the Bayside Hospital September 14, 1922, suffering excruciating pain from complete urinary retention.

The urinary retention was relieved by the gradual withdrawal of urine through a catheter. Rectal examination revealed an enormous prostate.

The metabolic chemistry showed 40 mg. of urea nitrogen and 2.6 mg. of creatine. Two days later a suprapubic cystotomy was done under local anesthesia (procaine 1 per cent). He was immediately place upon a low protein diet and

routine care. One week after the cystotomy his urea nitrogen was 46 mg. and creatine 2.8 mg. Two weeks later his urea nitrogen had fallen to 30 mg. and the creatine down to 2 mg.

On October 10th the prostate was enucleated under nitrous oxide gas anesthesia.

The convalescence was uneventful and he was discharged November 2nd, cured.

Case No. 2054, a retired merchant, was brought into the Bayside Hospital with complete urinary retention, on December 12, 1922. He was 72 years old and gave the history of having had two or three attacks of retention during the past year, but had been relieved by the use of the catheter. His removal to the hospital was the result of the inability of the doctor to pass a catheter.

A catheter was finally passed with much difficulty and the retained urine was gradually withdrawn.

A diagnosis of benign prostatic hypertrophy was made.

Metabolic chemistry revealed urea nitrogen 19 mg. and creatine 2.3 mg. A suprapubic cystotomy under local anesthesia was done and continuous drainage was instituted.

Dr. Bitzer's examination revealed a myocardial failure and he was immediately placed upon treatment.

One week later the urea nitrogen was 20 mg., and creatine 2.8.

December 26th the urea nitrogen was 16 mg. and creatine 2 mg.

On account of the condition of his heart it was considered inadvisable to administer a general anesthesia.

December 28th the prostate was removed under local anesthesia (procaine 1 per cent), and on January 30th the patient was discharged cured.

CONCLUSIONS.

1. That the delay in obtaining adequate treatment for patients with residual urine is dangerous.

2. That the pre- and post-operative care of patients is essential for success in prostatectomy.

3. That prostatectomy offers relief with a minimum amount of danger.

GASTRO AND DUODENAL ULCERS.*

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and
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The writers of this paper realize that this is a threadbare and worn subject, and the excuse for its presentation is primarily not to bring out anything new either in diagnosis or treatment, but to emphasize the importance of the disease as we see it from a clinical standpoint.

Taking this as a basic foundation for the paper, and having you clearly understand that we are not going into the scientific side of it, as has so often been done in research work to prove or disprove the cause of the existence of such ulcers, but rather to impress upon you the value of symptoms and early detection of this affection, is the thing that is of greatest importance to our minds.

We also realize that there is a wide difference of opinion between the clinician and the surgeon as to the proper method of treatment and the results to be had, and this should be explained in the beginning as the reason for the clinician's claim that in 60 per cent or more of the cases it is possible to effect a cure that is permanent without recurrence and that are free from symptomatology over a great many years.

The surgeon, from his standpoint, sees only the cases that have existed for a great number of years, presenting the complex symptoms that are present with these chronic cases, and they show lack of healing or the effect of medical treatment upon the condition; hence, it is their opinion that only about 10 per cent of all ulcer cases yield to medical treatment. The reason for this is, first, the medical man sees such a vast number of acute digestive disturbances that are finally diagnosed as ulcer, treated as such, lost sight of, never to reappear in the office of any doctor for further treatment; whereas, the surgeon of necessity, considers that medical treatment is of little value when the history, properly written and considered, together with the aids of diagnosis are brought to bear upon such cases, and, finally, operative procedure shows that these ulcers that have been subjected to medical treatment are not benefited.

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As to the etiological factors entering into the cause of ulcers, it is pretty definitely conceded that they are always of an infectious nature; by far a greater number being found as a secondary complication to focal infections, such as tonsils, teeth, or, in fact, any other of the infections that can be located elsewhere in the body, or from trauma of the mucosa as the result of taking of harsh foods causing the abrasion per se and secondary infections from the cavities.

To arrive at a proper diagnosis there is a definite procedure that should be followed in all cases, the most important of which is the proper taking of the history of the case. It should be written and re-written more than once. The patient should be permitted to discuss in his own terms the symptoms leading up to his visit to the doctor, and not allowed to give you a history as the result of leading questions. Not infrequently is it a fact that a patient will state a most definite history without any suggestion on the part of the doctor.

Of the symptoms that are of greatest importance in arriving at your diagnosis we would place at the head of the list pain; next, pain on pressure over the epigastrium; next, loss of weight; and, finally, hemorrhage.

The first symptom, that of pain, either in the acute or chronic type of ulcer, has a definite bearing, and whenever associated with any form of distress after the intake of food, should at once suggest to the mind of the doctor the possibility of ulcer. This pain varies in intensity depending upon the location of the ulcer, whether in the stomach, the pylorus, or the duodenum; but this can be said, and is of great importance, that when pain is constant for any great period of time under the midepigastrium, or to the right of it, either in front or to the left in the back, that is, located between the tenth and twelfth dorsal vertebra, there is no symptom that is so pathognomonic of ulcer as is this one symptom. Particularly true is this, when associated with food intake. There is a variation in the type of pain and the character of pain between the gastric and duodenal ulcer that must be considered. Where your ulcers are situated within the walls of the stomach or pylorus and not in the duodenum, the intake of food will be followed by pain appearing almost immediately and up to two and one-half hours, while that of the duodenal ulcer is very much later coming on—as a rule from three to five hours afterwards—and is most frequently felt at night, some five and a half or six hours after the intake of food. In fact, it is not infrequent to have these patients with duodenal ulcers say to you that the pain occurs with so much regularity that it is their custom to take to their room crackers or milk, so that when the pain appears they can partake of food and get almost instant relief.

As to the second symptom—that of tenderness—where the ulcer is present and active, the pain is definitely circumscribed and ever present and is easily differentiated from that of gall-stone, where the pain comes on acutely irrespective of taking food and whose location cannot be determined after the attack has subsided, while that tender spot of the ulcer, either duodenal or gastric, remains permanent and is easily detected by anyone.

In the type of ulcer that gives the greatest concern, and in practically all ulcers, the marked and rapid loss of weight is most pronounced. Not infrequently will your patient tell you of having lost thirty or forty pounds within a very brief period, say three or four months. It is usually this type of case that has the longest history of trouble and one which should cause extreme suspicion of malignant degeneration, which is a frequent complication of ulcer of the stomach. Nevertheless, duodenal ulcers will show a proportionate loss of weight to those of gastric ulcers, but the duodenal ulcer, except in about one per cent of the cases, does not degenerate into malignancy.

The fourth and last symptom that should attract your mind to the possibility of ulcer, namely, that of hemorrhage, is not sufficiently frequent to lend any great weight in making the diagnosis and is only a significant one when associated with the three more prominent symptoms just mentioned. Not infrequently is it true that your patient will have hemorrhage from the stomach without other symptoms, where you will have to differentiate between diseases of the pancreas, spleen and liver, being devoid of the symptoms referred to above.

Just here it is meet and proper that we should refer to the character of these ulcers and the type of the pain produced, and say that the prominent symptoms of the ulcer mentioned before are not constant in every way. Often you will carry a history over twenty years where there are remissions of symptoms lasting for six months or more or more down to a few weeks. In fact, the early

spring and late fall are the times for the ulcer to become most active and produce its symptoms. This is not easily explained and we shall not attempt to give you the reasons for the same.

After you have completed your clinical diagnosis the case should be the subject of the roentgenologist, which adds very materially to what is an essential part of the completed diagnosis. The various irregularities of the stomach, incisures, irregular caps, adhesions, etc., can only be determined by the careful use of the X-ray and in the hands of an experienced operator. Too much cannot be said for its diagnostic aid.

As to treatment: Medical treatment should be tried on every case and persisted in for a period of six weeks to three months, unless for special reasons. If, after a trial of the medical treatment, failure is met with, it is then quite early enough to think of surgical intervention.

As to medical treatment: There are various types of diets, one differing from the other only in slight detail. The principles of medical treatment are as follows: Absolute rest in bed; ice over the epigastrium; restriction of diet within the first two weeks to milk and nothing else, after that adding such food as is easily digested and nonirritating, with alkaline medication for not less than from four to six weeks, and, after that, for a period of months, providing the symptoms have subsided with the proper regulation of diet.

As to surgical treatment, we shall only mention the various types, rather than the details of surgery. Pyloroplasty, excisions, cauterizations, and, where definite obstructive changes have taken place, resections and gastroenterostomy should yield wonderful results in all chronic types of ulcer that have not undergone malignant degeneration.

It is our pleasure to present the histories of six cases that have occurred within our practice during the past four months, representing different types of the disease, one differing from the other somewhat, but of sufficient importance to bring to your attention the value of painstaking work.

CASE NO. 1.

We wish to refer to this case with a great deal of emphasis. This young man, at the age of 27, having gone through the entire campaign in France, subjected to active and intense service without a day's illness, whose history proves too that he was negative of any disease during the last twenty years, had an acute perforating duodenal ulcer coming on at 12 o'clock at night, after the intake of food at 5 o'clock on the afternoon of December 25, 1922. The pain was of such intense character that it was impossible to relieve it with morphia, growing continuously worse; abdomen rigid, elevation of temperature, and uncontrollable pain up to 8 o'clock of the morning of December 26th, when the abdomen was opened and acute perforation found in the first portion of the duodenum, with parts of the stomach's contents over the entire peritoneal cavity. In this case there was a simple closure with drainage and non-eventful recovery. This case particularly typifies that form of ulcer that has the greatest hazard as to life. In the past a diagnosis has not been made in many cases, and the patient died because of the incident delay.

Of the other four types, No. 2 represents a history that covered more than twenty years, with attacks slight in the beginning, long intermissions of apparent relief, with recurrences after five or six years, the attacks becoming more frequent up to a period of the last six months, but no rapid loss of weight ensued. Visible peristaltic waves over the upper epigastrium, with X-ray findings, stomach analysis, all indicated a complete obstruction. Projectile vomiting, inability to retain food and loss of weight aggregating twenty pounds preceded the operation by two weeks. This was a duodenal ulcer producing a complete obstructive condition, where a gastroenterostomy gave immediate relief, rapid recovery and regaining of weight.

Case No. 3 typifies another type of ulcer whose history you will hear in a few moments, and is of importance because of the fact that the X-ray showed conclusively that it was an acute perforating type of ulcer; that within thirty-eight hours after the X-ray finding this man had a perforating ulcer and died within four days, having declined operative interference which was offered to him at the conclusion of the X-ray examination.

Case No. 4 typifies a chronic type of ulcer that had existed for eight years that yielded to medical treatment, being free from all symptoms and illness, considered, up to this moment at any rate, a perfect result in the hands of the medical man.

Case No. 5 is of interest only so far as the X-ray finding is concerned, and whose plates will be shown you by Dr. Cunningham as a typical duodenal ulcer yielding to medical treat-

ment and being relieved in its entirety up to this moment.

Case No. 6 is the type of ulcer that is met with so often, whose history is rather vague, covering a period of six years without any great amount of illness up to four months preceding the operation, when a definite obstructive change was shown, both clinically and by the use of the X-ray, that had progressed to a malignant stage. This case was handled from a surgical standpoint doing a posterior gastroenterostomy, no loop, and this operation done only to relieve starvation. The patient rapidly gained weight immediately thereafter, but is now in the terminal stage of cancer.

We are deeply indebted to Dr. L. W. Cunningham for his kind assistance in these cases, and others, and it is our pleasure to have him show you lantern slides and discuss with you the various findings from the standpoint of the roentgenologist.

CASE NO. 2.

Age 46; farmer.

Past History: Negative.

Personal History: Usual diseases of childhood; malaria twenty years ago, no other illness. About ten years ago he began to have trouble with his stomach, followed by headaches; was relieved by cathartics. There were intervals of months in which there was freedom from pain or distress; these symptoms became gradually worse and more frequent and were complicated with vomiting which lasted for several days or a week, when he again became free of pain for some time.

Physical examination: Patient very much emaciated and undernourished; skin dry and parchment-like; tongue red and angry looking. Heart and lungs negative; abdomen small with visible peristalsis over stomach; soreness to pressure over pylorus and gall-bladder region.

Test Meal, 1,000 c.c. Clear fluid, very acid. Hcl., 100. Total acidity, 140.

CASE NO. 3.

Age 67; merchant.

Past History: Negative.

Personal History: Negative as far as disease is concerned.

Present complaint: About six months ago began to have pain in upper abdomen, coming on after a hearty meal, usually in the evening or middle of the night; symptoms became gradually worse and were only relieved by taking food or vomiting; sometimes get relief by taking soda or peppermint.

Physical examination: Head and chest negative; abdomen, soreness in epigastrium to the right of media line.

Test meal, one hour, 800 c.c. Hcl., 90. Total acidity, 120.

CASE NO. 4.

Age 34; occupation, salesman.

Past History: Negative.

Personal History: Measles and mumps as a child; influenza five years ago. Has had trouble with indigestion for eight years, being troubled with pain and discomfort in upper part of abdomen for several months, then would get relief by dieting and medication for two or three months. Pain comes on when stomach is empty three or four hours after eating; kind of food makes no difference as far as pain is concerned, except acid fruits; in fact, eating usually relieves the pain and discomfort.

Physical Examination: Patient well nourished; skin normal; several bad teeth; heart and lungs normal; abdomen, tenderness to pressure in right epigastrium just above the umbilicus.

Test meal, 200 c.c. Hcl., 70. Total acidity, 90.

CASE NO. 5.

Age 33; occupation, traveling man.

Past History: Negative.

Personal History: Had measles, mumps and scarlet fever. For the last four years has been troubled with pain in epigastrium, particularly when very tired or worried; would get relief by making himself vomit; would then be free from pain as long as two months at a time. Pain always comes on in the afternoon or night; very often wakes at 2 or 3 o'clock in the morning with pain; taking of food relieves him immediately. Has not noticed that any particular kind of food brings on pain.

Physical Examination: Patient well nourished; no loss of weight; heart and lungs negative; abdomen — tenderness on pressure over right epigastric region.

Test meal, 200 c.c. Hcl., 60. Total acidity, 90.

CASE NO. 6.

Age 74; occupation, farmer.

Personal History: Negative up to six years ago, when he noticed for the first time some epigastric distress after taking of food, which was relieved at first by the use of bicarbonate of soda and other simple remedies, later becoming

more aggravated, with intermissions at shorter intervals between attacks, nausea, vomiting, and six weeks preceding this examination had lost materially in weight, with projectile vomiting, visible peristaltic waves from left to right, with a marked dilitation of the stomach.

Diagnosis at that time carcinoma in the pyloric end of the stomach.

Had this case been properly diagnosed and treated in its early days, it is quite likely that a malignant degeneration would not have occurred.

A DISCUSSION OF SOME OF THE DIAGNOSTIC POINTS OF THE ACUTE ABDOMEN.*

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Century, Fla.

The frightful mortality and morbidity from acute abdominal emergencies has impelled me to call your attention to some of the diagnostic features. As appendicitis is one of the most frequent acute abdominal conditions, I recalled the last fifty cases operated, and have the following to present to accentuate the effect of delay on mortality:

Ruptured (drained), 21; mortality, 29 per cent plus.
Not ruptured (drained), 14; mortality, 0 per cent.
Not drained, 15; mortality, 0 per cent.

Personally, I have never seen a clean or unruptured case of appendicitis die. Delay in other acute abdominal conditions is fraught with like disaster.

This being true it behooves us to make a strenuous effort to eliminate it.

You will observe in the figures above presented, the mortality of delay to be 100 per cent. I will not charge, as is often done, the general doctor with this state of affairs. Early in his experience he has followed a few of his cases to the surgeon, who took bellyache as an indication for operation, and has seen organs removed that he knew were perfectly normal. This has led to confusion in his mind and a doubt is soon formed about bellyache that leads to delay. The problem is squarely up to the man who operates. He must be capable, industrious, absolutely honest and firm with his doctor patrons.

In my limited observation of doctors who refer me patients, there are good sensible ones, and antithetic extremists. Of the latter, one extreme wishes you to operate every bellyache and is angry if you do not; the other does not want any operated. The last-named group is a great menace to both his clientage and to the reputation of the surgeon who is so unfortunate as to get hold of his late cases. They predict a funeral when forced to carry the patient to the surgeon and the prediction usually comes true. I would urge everyone, when possible, to follow his cases to the surgeon, and then check up their combined diagnosis.

You will observe a chart there, in which is listed all the possible conditions, which I could recall, that may cause pain in the abdomen. The abdomen is cut up into four quadrants, the pelvis being included, and the epigastrium is made to mean the mid-line from the zyphoid appendix to the umbilicus and the hypogastrium from the umbilicus to the pubis. I shall not repeat this list, but will proceed to the discussion of some of the general principles governing diagnosis of the acute abdomen. I can do no better than to state those laid down by Cope:

(1) The first principle is that of the necessity of making a thorough and serious attempt at diagnosis.

(2) Diagnose early.

(3) The principle of making a thorough routine examination.

(4) The application of one's knowledge of anatomy.

(5) The application of one's knowledge of physiology, particularly in obstructive lesions.

(6) The necessity of excluding medical diseases before operating.

These principles are so obvious that discussion is not needed.

It is necessary when presented with an acute abdomen to obtain an accurate chronologic history of the attack and such of his previous history as may be of value. Pain being the chief symptom in most cases, should have its nature explained, and the following noted: Its location, radiation, shifting or stationary, accompanied or followed by vomiting; bowels whether constipated or loose and the nature of the discharge; whether or not urination is disturbed or painful and its relation to present suffering; fever whether it preceded, accompanied or followed the pain; whether or not respiration is painful; or whether body movements are painful and which group of muscles is affected. Unless these inquiries are made something very important may be missed.

*Read before the Dallis County Medical Society at Selma, Ala., Sept. 26, 1922.

For instance the right iliac pain, early in typhoid fever, is practically always preceded by fever. I think I can say without contradiction, that every disease has a perfectly orderly development where not disturbed, and this is particularly true of the diseases of the abdomen.

Vomiting, as a rule, is earlier in colics than in inflammation, except intestinal perforations; in high obstructions than in low; not common in pelvic diseases; early in acute intestinal toxæmias and nearly always accompanied with diarrhœa, and is more frequent in children than in adults.

Temperature is not high in the common acute abdominal and pelvic diseases. In salpingitis and appendicitis the range is about the same—100 Fahrenheit to 102 Fahrenheit, it will range perhaps a little higher in cholecystitis and may be quite high in hepatic abscess. A high temperature in the acute abdomen nearly always means a spreading peritonitis. The pulse usually corresponds with the temperature, except in intestinal perforation, acute pancreatitis and ruptured ectopic gestation.

Abdominal Rigidity and Tenderness. Rigidity is nearly always present during paroxysms of pain, but relaxes during the intervals, but is continuous when there is involvement of the peritoneum. This accounts for its absence during the early period of appendicitis and cholecystitis. It is not at all common in pelvic diseases on account of the spinal segment that corresponds to this area being on a lower level. The pyroformis, psoas, iliacus and obturator spasms are present in low inflammations of the abdomen and the pelvis.

Tenderness (or pain on pressure) is very valuable in locating the point of inflammation both by direct pressure over the point and by distant pressure causing local pain.

Distention, general or local, should always be investigated carefully, and in the absence of toxæmias that may cause intestinal paralysis, usually indicate intestinal obstruction or peritonitis. Hyperesthesia of the skin of the abdomen is not constant but occasionally of value in testing points of inflammation.

Right Upper Quadrant. Cholecystitis—Perforating Gastric or Duodenal Ulcer—Hepatitic Abscess—Diaphragmatic Pleurisy—Right-sided Pneumonia—Spinal Caries—Tabetic Crisis—Angina Pectoris—Perforating Ulcer or Obstruction of Upper Portion of Ascending and Right Half of Transverse Colon—Diseases of Right Kidney and Ureter—Appendicitis—Herpes Zoster—Aneurism of Hepatic Artery—Acute Malaria.	*Epigastrium.* Everything in the two upper quadrants plus Strangulated Umbilical Hernia and Appendicitis.	*Left Upper Quadrant.* Perforating Gastric Ulcer—Acute Pancreatitis—Acute Splenitis—Rupture of Spleen—Obstruction or Rupture of Left Half of Descending Colon—Left Diaphragmatic Pleurisy or Pneumonia—Tabetic Crisis—Angina Pectoris—Diseases of Left Kidney—Spinal Caries—Herpes Zoster—Rupture of Aneurism of Abdominal Aorta—Acute Malaria—Diseases of Left Ureter.
Right Lower Quadrant. MALES. Appendicitis—Intussusception—Right Ureteral Block—Obstruction or Perforation of Lower Half of Ascending Colon and Cæcum—Volvulus of Cæcum—Typhlitis (Tubercular or Amœbic)—Spinal Caries—Hip Joint Disease—Sacroiliac Disease—Inflammation of the Right Vas-Deferens—Seminal Vesiculitis—Herpes Zoster—Strangulated Femoral and Inguinal Hernia—Inflammation of the Lymphatic Glands Along the Iliac Arteries and Ruptured Aneurysm of Iliac Arteries—Cholecystitis—Tabetic Crisis—Malaria. FEMALES. All above except Inflamed Vas-Deferens and Seminal Vesiculitis, and in addition: Salpingitis—Oophoritis and Twisted Pedicle of Ovarian Cyst or Fibroid. And in Pregnancy, Ruptured Ectopic Gestation.	*Hypogastrium.* Intestinal Colic or Paralytic Illeus may make itself manifest in any of the regions named; likewise Mesenteric Thrombosis or Embolism—Obstruction of the Bladder. Everything in the two lower quadrants, plus Diseases of the Uterus and Bladder.	*Left Lower Quadrant.* MALES. Obstruction of lower half of Descending Colon—Volvulus of Sigmoid—Inguinal and Femoral Hernia—Blocked left Ureter—Spinal Caries—Herpes Zoster—Inflamed Lymphatic Glands along the left Iliac Arteries—Hip Joint Disease—Sacro Iliac Disease—Inflammation of Left Vas-Deferens and Seminal Vesicles—Tabetic Crisis—Ruptured Aneurysm of the Iliac Arteries—Diverticulitis—Malaria and Inflamed Lymphatic Glands. FEMALES. All above except Inflammation of the Vas-Deferens and Seminal Vesicles, and in addition: Salpingitis—Oophoritis and Twisted Pedicle of Ovarian Cyst or Fibroid. And in Pregnancy, Ruptured Ectopic Gestation.

I shall briefly discuss the most common lesions of the acute abdomen in the order of their frequency as I have observed them.

Appendicitis. The dictum laid down by John B. Murphy, namely, pain—usually epigastric, nausea or vomiting, fever, leucocytosis, localized tenderness—should be followed in diagnosing this condition. The exceptions to this are due to abnormal situation of the appendix, particularly of the retrocæcal and pelvic appendix. The former may resemble pyelitis, perinephritic abscess or ureteral colic; however, examination of the urine microscopically should in most cases clear up the diagnosis. Murphy's fist percussion over the right kidney is particularly valuable in differentiating ureteral obstruction from even the retrocæcal appendix, as the pain is much more agonizing in the former than in the latter. The pelvic appendix may be confused with acute salpingitis, but careful examination by vagina will show the appendix higher than is usual for the acute tube, except in rare instances where they are adherent together. There is no particular difficulty in recognizing acute salpingitis, for it most often begins in the left side and later shifts to the right; besides there is usually a history of dysuria and leucorrhœa. The main danger is to mistake salpingitis for appendicitis, ruptured ectopic gestation, or twisted pedicle of the ovary. This is especially important because acute salpingitis does not often call for urgent operative interference.

Cholecystitis. The order of development is almost identical with that of appendicitis and the main difference is in the location of tenderness. There may or may not be a history of previous attacks or of jaundice. The less violent onset will differentiate it from perforating gastric or duodenal ulcer, or acute pancreatitis, and the previous history from hepatic abscess.

Intestinal Obstruction. I will not discuss those due to hernia, except that of femoral which may be overlooked on account of the occasional small size of protrusion or excessive fatness of the patient. In infancy and early childhood intussusception is the most frequent obstruction and the iliocæcal is the most common of the three varieties. The classical picture, pain, shock, vomiting, bloody mucus discharge from the bowel, paroxysmal pain, and the feeling of a tumor, and absence of cecum from right side can usually be observed. The obstruction by bands and adhesions have a similar picture except the bloody discharge and perhaps a lessened amount of shock, and there is generally a history of previous surgical operations or injuries of the abdomen or peritonitis. Cancer of the large bowel is the most frequent cause of obstruction in people past middle life. There is here usually a history of subacute attacks of obstruction, that gives a hint of the pathology. Volvulus of the sigmoid and iliocæcal junction are also most common in the elderly and usually are very sudden and severe in their onset.

Acute Urinary Retention, from prostatic hypertrophy, is easily recognized and urgency for action is obvious.

Ruptured Ectopic Gestation should not be very difficult to recognize, but as a matter of observation I find that it is frequently overlooked and the cases are later brought to the surgeon with infection of the pelvic hematocele. There is nearly always a history of a delayed or missed period or periods, with sudden abdominal pain, usually hypogastric, accompanied by faintness or actual fainting. The patient soon becomes blanched with more or less rapid and feeble pulse. Examination shows a doughy or fluid mass in the abdomen with usually bulging of Douglas' culde-sac. The accidents of pregnancy, such as rupture of the uterus and those necessitating Cæsarian section, properly belong to the acute abdomen and the need and urgency for operative treatment are usually very obvious.

Twisted Pedicle of an Ovarion Cyst is not always easy of recognition on account of the great distention of the sac, giving the impression that the mass is a solid tumor. However, this is of no great importance since the urgency of the symptoms indicates the necessity of an immediate operation.

Hepatic Abscess is not frequent in this climate. It is not so difficult, as a rule, to diagnose if the previous history is carefully considered. The amœbic type is generally preceded by diarrhœa or dysentery. However, occasionally the bowel disturbance has been forgotten and it is necessary to question closely to bring out this point. The other type is usually preceded by some pus focus in the abdomen, but occasionally from other parts of the body. The physical findings suggestive of hepatic abscess are enlargement of the liver, fever and tenderness. Exploration with the needle generally clinches the diagnosis.

Perforating Gastric or Duodenal Ulcer is so violent in its onset that the attendant is made

aware that some great calamity has happened in the patient's abdomen, and a history of pain at regular intervals with relation to meals will usually start thought in the right direction. The main physical signs are shock, board-like hardness of the abdomen, restriction of diaphragmatic motion, absence of liver dullness, particularly in the mid-axillary line, and evidence of spreading peritonitis.

Inflamed Meckle's Diverticulum I have never seen, but should imagine the symptoms are largely those of appendicitis, with a different point of tenderness and rigidity. However, as the appendix varies considerably in its location, I do not think it possible to differentiate before operation.

Acute Pancreatitis is another acute abdominal lesion that I have never seen, but, like perforating gastric or duodenal ulcer, it should be easily recognized as a surgical emergency. I understand that patients frequently faint on account of the violence of the symptoms. Here again it is said we have the board-like hardness of the abdominal muscles with the pain and maximum tenderness in the left epigastrium. There is usually a history of chronic gall-bladder disease.

Diverticulitis I have only seen in a clinic. The symptoms are very similar to those of appendicitis except that the condition is almost exclusively in the left side (sigmoid) and is a disease of old age. Volvulus and cancer of the sigmoid are the lesions to be considered in making a diagnosis.

ECTOPIC BEATS, THEIR SIGNIFICANCE AND TREATMENT.*

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Pulse irregularities due to abnormal impulses originating at a point in the auricle or ventricle, other than the pacemaker, is the most frequently observed type of arrhythmia. The ventricular type is more common than the auricular. Through Lewis's[1] experimental work on animals, it is possible by electrocardiographic examination, not only to determine the type but the approximate location of the focus.

The characteristic possessed by the cardiac muscle of rhythmicity, plus an increased local irritability, is responsible for cardiac extrasystoles. The part played by the nerve mechanism is imperfectly understood. Vagal stimulation, through pressure, deep breathing, and digestive disturbances will in some cases precipitate ectopic beats, while in others sympathetic stimulation through exercise will have the same effect.

THE AURICULAR TYPE.

Premature beats originating in the auricles are distinguished by disturbance of the dominant rhythm. The time interval of the premature beat plus the succeeding beat does not equal two normal beats. In other words, ectopic auricular beats are not followed by a compensatory pause.

Electrocardiograms show, as a rule, inverted P's, especially in leads two and three, in ectopic beats originating in the region of the inferior vene cava and atrio-ventricular node. In those originating near the sino-auricular node, however, the P's are positive and show only minor variations from the normal. In this type the ventricular complex is not affected.

Auricular extrasystoles are an early sign of cardiac failure, and are frequently associated with dilitation of the auricles. It is commonly seen in mitral disease and cardiosclerosis, and is often followed by tachycardia flutter, and fibrillation, and is often observed following the termination of fibrillation by quinidin. Naturally it may be present in frank decompensation. They are usually increased by exercise, and are often brought out when not present during rest. No symptoms are produced other than those of the underlying disease.

THE VENTRICULAR TYPE.

Ventricular ectopic beats may originate either in the right or left ventricle, the former being more common, or in the region of the atrio-ventricular node. The auricular or dominant rhythm is maintained in this type, the premature and succeeding beat equalling two normal beats, the ectopic beat being followed by a compensatory pause, except when they are interpolated between two normal beats. They may be associated with retrograde auricular beats, especially those originating in the vicinity of the atrio-ventricular node.

The electrocardiogram shows a bizzare QRS complex followed by an inverted T, with the P absent or buried in the QRS. The chief deflection in the QRS group in lead two is positive in the right ventricular type and negative in the left,

*Read before the Fiftieth Annual Meeting of the Florida Medical Association, held at Jacksonville, May 15, 16, 1923.

the transition being rather abrupt. Premature beats originating near the atrio-ventricular node show deflections approaching the normal.

From a clinical point of view two types of ventricular extrasystoles are encountered. First, those showing a disposition to occur while at rest when the pulse rate is slow, and that are abolished or decreased by exercise. Most cases showing an occasional ectopic ventricular beat belong to this class. They are harmless, and at least are not associated with any serious cardiac pathology, and show no special disposition to progress. In fact they are apt to be temporary, and are frequently observed following acute infections, in gastrointestinal disturbances, and occasionally show a tendency to occur as a family characteristic. Ectopic beats are probably too frequently considered to be the effect of gastrointestinal disturbances, though it is undeniably true that they may be an etiological factor in their production. This influence is probably reflex, through vagal inhibition or stimulation. It is not a toxic phenomena as ordinarily observed. In the presence of acute infections, it may be either toxic or reflex.

The second type shows a tendency to subside with rest and is markedly increased by exercise. Marked arrhythmia is frequently noted, covering a period of many years. In other instances they are observed as an occasional skip in various cardiac diseases. It is possible that the persistent type may be associated with the presence of scar tissue, following some focal infection or accident to the cardiac muscle, though they have never been definitely demonstrated. This may account for the remarkable constancy of form of some electrocardiographic curves.

This type is usually associated with demonstrable cardiac pathology. It is frequently observed in cardiac failure of the congestive type, and dilitation of the ventricles. Cardiosclerosis is probably more frequently found in cases showing premature ventricular beats, though they occur in cardiorenal, valvular diseases, and aneurism of the ventricles[2], and at times in cases showing a high degree of compensation. Strickland-Goodall has called attention to the frequency of left ventricular extrasystoles in cardiac failure in aortics[3].

The association of ectopic beats with other types of arrhythmia is frequently observed. At times both the auricular and ventricular types are found in the same curves. Ventricular ectopic beats are frequently seen in auricular fibrillation, and occasionally in atrio-ventricular and intra-auricular block, and bundle branch block.

The symptoms produced by premature ventricular beats are usually insignificant. Individuals quickly become accustomed to the occasional "skips" and usually ignore them. Others develop anxiety states of varying degree. Substernal and precardial pain or distress are frequent complaints. It is often described as a flopping or hard beat. Real embarrassment of the circulation may occur in bigemina, with apparent halving of the pulse rate, where every other beat is premature, and quickly follows a normal beat, especially if marked cardiac pathology is present.

The diagnosis is most accurately made by electrocardiographic examination. However, it is possible to differentiate most cases by means of venous and arterial tracings. Without such instruments it is largely a matter of conjecture, and in many instances impossible to make a correct diagnosis. Occasional ectopic beats can at times be classified by such crude methods as timing with a watch or the foot.

The arrhythmias most difficult to distinguish are fibrillation with a slow pulse, atrio-ventricular block, intra-auricular block, atrio-ventricular nodal escape, and alternation. Fibrillation with a slow pulse rate, not produced by digitalis, is not often encountered, but may be extremely difficult to differentiate from auricular premature beats, without instrumental aid. Ventricular ectopic beats, producing bigemina, in which the ectopic beats occur immediately following the normal and fail to produce a radical pulse, may be confused with atrio-ventricular block, but can usually be detected by the stethoscope. Intra-auricular block is impossible to differentiate without the aid of electrocardiographic curves. Escape of the atrio-ventricular node may stimulate the ventricular type of premature beats, and may produce a bigemina that is impossible to distinguish without instrumental aid.

The treatment of arrhythmias due to ectopic beats depends upon the type found. In the auricular type digitalis and rest usually relieves the symptoms and at least reduces the frequency of the premature beats. The type of ventricular beats that occur during rest is, as a rule, aggravated by digitalis. It may or may not be influenced by atropine. Reassurance, with an explanation of the harmless character of the trouble, if the beats are not excessive, is as a

rule all that is necessary. In the second type, if signs of cardiac failure or dilitation are present, digitalis is indicated. Quinidin is being used with success in cases presenting marked arrhythmia due to ectopic ventricular beats that are well compensated. Ten grains daily is usually sufficient to control the disorder, and may be taken for a considerable period without danger. Many of the cases treated with quinidin, however, show a prompt return as soon as the drug is discontinued.

(1) The Mechanism and Graphic Registration of the Heart Beat. Thomas Lewis, New York, 1921.
(2) Aneurism of the Left Ventricle. Morris Kahn, Am. Jr. Med. Sc., Vol. CLXIII, No. 6, Philadelphia.
(3) Premature Contraction, and Its Significance. J. Strickland-Goodall, N. Y. M. J., 115:204, February 15, 1922.

APPLICATION OF DIAGNOSTIC METHODS.*

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Da Costa, in his "Physical Diagnosis," quotes W. W. Keen, who says: "With all our varied instruments of precision, useful as they are, nothing can replace the watchful eye, the alert ear, the tactful finger and the logical mind which correlates the facts obtained through all these avenues of information and so reaches an exact diagnosis." No word could be added to the above quotation which could express more clearly this thought. Though this statement was made long before we reached our present era of laboratory and instrument diagnosis, it is as much a truth today as then. It must be understood in the beginning that no statement is made or thought expressed in this paper without being mindful of Keen's observation and its application to present-day diagnosis.

Today, diagnosis, in its broadest sense, has passed the scope of a single individual. The methods substituted are either a referring of various phases of the diagnostic studies to the different specialists in their different locations, each man arriving at his conclusions independently, and finally having these conclusions correlated by a single individual—the diagnostician—or by assembling these various specialists under one roof and having the sum total of information go with the patient until the studies are completed and the conclusions studied by one or all the group. In other words, the doctor seeks the aid of specialists if needed, correlates his facts and draws his conclusions, or the group studies the case as a whole and finally the individual, under whom the case comes, makes the detailed diagnosis and directs the treatment. By the first method, perhaps the patient has, in some cases, the benefit of more detailed study by a single individual and more of a personal contact; the second method has the advantage of careful observation by several men.

Out of this has evolved another method which seems to have all the advantages and none of the disadvantages of either of the other methods. Briefly outlined, this method is where the internist makes his examination, collects all laboratory reports, seeks the aid of specialists, correlates his facts, finally making his diagnosis and then presenting his case to the closely organized group for discussion. This method seems to bring about the highest percentage of correct diagnoses and determines more correctly the proper handling of the case.

Lennic's discovery of the stethoscope marked the beginning of careful chest examination. No one underestimates its value and no one would suggest discarding it. This is an improved method of "transmitting impressions to the alert ear." Yet, today, who would consider a chest examination thorough or complete without repeated examination of the sputum and a careful roentgenographic examination. These are merely additional facts to be obtained and correlated by the logical mind. Who has not had a chest case give a negative or misleading history, even though carefully taken, or has had physical findings to be of such little significance as to be entirely discounted, even perhaps negative X-ray findings, only to find tubercle bacilli repeatedly in the sputum? Certainly, neither the laboratory nor the X-ray should make the diagnosis first, but it should confirm as often as possible.

R. L. T., male, age 24, married. Family history negative. Past medical history negative except for pleurisy in left side in 1915. Chief complaint: Pain in left side from above axilla down to border of ribs and across small of back. Rheum-

*This paper was intended for presentation before the Fiftieth Annual Meeting of the Florida Medical Association, held at Jacksonville, May 15, 16, 1923, but owing to an overcrowded program the essayist did not have an opportunity.

atism in right hip. Duration of complaint, three years. Physical examination showed little except slight dullness over left upper, and an occasional indeterminate rale with slight prolonged expiration. Diseased tonsils. Laboratory examination negative except sputum which was positive for three examinations after repeated negatives.

One would, by no means, suggest blood chemistry examination on every case, yet it is the difficult, the puzzling case where we need all our aids to diagnosis. It sometimes happens only by thoroughness is the value of the special studies demonstrated, not by the history nor by the ordinary methods of physical examination.

Recently, a known case, a doctor's wife, had puzzled both the internist and the surgeons. No one agreed as to the diagnosis and, as usual in such cases, numerous diagnosis were made. Some one suggested chemical metabolism. Two tests were done, one to determine the amount of cholesteral, and the other the sugar in the blood. The first was normal. The second showed a high blood sugar content. The urine was negative. A diagnosis of cancer of the pancreas was made and an exploratory operation advised. This was done and the correctness of the diagnosis revealed.

A few years ago Basal metabolism was attempted only in the largest hospitals or clinics because of the expensive, cumbersome apparatus required and the complexity of the technique. Today, an accurate portable or a small stationary apparatus are available at a comparatively small sum. With very little training any competent technician can determine accurately the metabolism rate. Despite this, many thyroid cases are operated on without Basal metabolism determination. Whatever may be one's opinions regarding treatment or operation on all enlarged thyroid glands, regardless of the metabolic rate, certainly no case can be as intelligently handled as when Basal metabolism tests are made. Do we not owe it to our patients to give them the advantage of every known scientific advancement?

We report two cases which gave a clinical picture of mild hyperthyroids. Enlarged thyroid, nervousness, choking. Had been given a diagnosis of hyperthyroids and thyroidectomy advised. Picture was suggestion of hyperthyroidism. Basal metabolism done and checked again.

G. H. W., age 36, married, female. Family history negative. Past medical history negative except for pneumonia at sixteen or seventeen years of age. Tonsilectomy had been done. Chief complaint: Drawing in left side of face. Choking and nervousness.

Physical findings negative except poor teeth which X-ray showed were abscessed, and enlarged thyroid gland. Thyroidectomy had been advised. Two Basal metabolisms done and both were 13 per cent below normal. Abscessed teeth removed and choking disappeared and nervousness relieved.

H. M. B., age 40. Family history negative. Past medical history negative except diseased tonsils and malaria twelve years ago. Chief complaint: Enlarged thyroid gland and nervousness. Basal metabolism done and found to be 3 per cent below normal. Tonsilectomy done. Nervousness disappeared.

May a word of caution be spoken here? The mere doing of laboratory or technical diagnostic studies does not mean an intelligent interpretation of these findings. The internist should have at least a working knowledge of all investigations he has made, even if done by a competent technician. The mechanical findings are mere figures and can often be misunderstood unless the technique, the why, and a study of the interpretation is a part of the knowledge of the diagnostician.

A careful painstaking history cannot be emphasized too often; that history should be written in detail and reviewed each day with a view to adding information, obtained from the patient, as his memory becomes refreshed or his confidence in the taker more formally established.

SUMMARY.

First—A careful history, a complete and painstaking examination is the first requisite to diagnosis.

Second—The patient is entitled to every known aid to make a correct diagnosis.

Third—The internist or diagnostician should have a thorough knowledge of all technical studies necessary for diagnosis.

Fourth—In the final analysis it is the analytical mind that correlates the facts and deducts the essentials that make for a correct diagnosis.

REPORT OF A CASE OF MYELOGENOUS LEUKEMIA.*

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In November, 1919, Mr. J. G., white, male, 51, weighing about 185 pounds, strong and healthy appearing, was brought into my office. He had been struck by a passing car and thrown from his wheel. There were a few abrasions on the face, chest, arms and chin, but these were not sufficient to account for the extent of the shock in a man of his temperament.

He complained of a pain under the mid-sternum but I did not find any fracture. The pain continued for about two weeks, then improved enough so that he made a settlement with the driver of the car without having an X-ray examination as I had suggested.

As soon as the minor injuries were healed he continued his work and I did not see him again for several months. When I saw him again I did not recognize him for the same man. He looked like a skeleton of his former self, thin, pale and very much older.

In December, 1920, he had a cough which caused his relatives to fear tuberculosis. I went over his chest very carefully, but failed to find any tuberculosis symptoms. There was a slight bronchitis which promptly cleared upon treatment. At this time he was staying twelve miles away and I seldom saw him.

During the following months I occasionally saw him on account of indigestion, but there was always a history of some indiscretion in diet and the trouble would disappear after cathartics were given.

In October, 1921, he came in complaining of shortness of breath, great soreness under sternum and in left side, with inability to eat without great discomfort. He said his eyes had gotten so bad he could scarcely see. He had had a cataract removed from his right eye in June. The spleen extended to the midline and down into the pelvis, liver enlarged, and heart overtaxed. He weighed about 140 pounds, was very pale and anemic.

After a blood specimen was taken for a Wassermann I started him on iron, strychnine, arsenic with mercury protiodide ¼, t. i. d.; one teaspoonful of epsom salts each morning and a teaspoon of sodium bicarbonate in glass of water before dinner and supper. When this treatment had been used about a week with marked improvement a negative report came in from the state laboratory. Suspecting that this was one of the clynically pos, lab. neg. cases, the treatment was continued without making the careful blood examination that would have given the correct diagnosis.

After a few weeks he discontinued treatment and returned to work. In two months he needed rest and treatment again. He kept alternating between rest and work until December, 1922, when, while night-watching he fell unconscious some time about 2 or 3 a. m., and laid helpless until workmen found him in the morning still unable to speak. The ashy gray pallor and stertorous breathing had given the impression to the workmen that he was dying. When I saw him, a slight facial paralysis as well as a slight motor paralysis of the right side was evident. The whole body was swollen, the legs as large as the thighs should have been.

A blood smear was sent to Dr. Youman's laboratory in Miami. The report: Neutrophiles, 46 per cent; esinophiles, 5 per cent; lymphocytes, 18 per cent; large mononuclears, 1 per cent; transitional, 1 per cent; eosinophilic-myelocytes, 22 per cent; neutrophilic-myelocytes, 7 per cent. It would seem that the white cells outnumber the red, which left no doubt that it was a case of myelogenous leukemia.

During the first week in January he had severe hemorrhages from the kidneys, bowels and nose which seemed to help rather than hinder him.

I took him to Dr. J. L. North for X-ray treatment, but continued the mercury, arsenic, strychnine and at the suggestion of Dr. DuPuis, of Lemon City, I used quinine. The combined treatment has temporarily relieved all pain and tenderness in the abdomen, reduced the spleen to almost normal size. The patient has gained fourteen pounds in weight, has a good appetite and digestion and gained strength to where he is asking when he can go to work. There is still some tenderness at the upper end of the leg bones. The laboratory report from blood taken May 12th was as follows: Neutrophiles, 71 per cent; esinophiles, 2 per cent; lymphocytes, 18 per cent; large mononucleares, 1 per cent; transitional, 1 per cent; eosinophilic myelocytes, 7 per cent; neutrophilic myelocytes, 3 per cent; total white count, 8,600. Microblasts, 4 per cent; normal blasts, 2 per cent; megleoblasts, 1 per cent. There

*Read before the fourth annual meeting of The Florida Railway Surgeons' Association, held at Jacksonville, May 14, 1923.

appears to be a normal proportion between the red and white cells.

The question of interest to the railway surgeon is what relation has the injury to the disease. Dorland defines myelogenous leukemia as a condition that is due to a disease of the spleen and bone marrow. Stephens, in his practice of medicine of 1923, says nothing definite is known of its cause; inheritance, unsanitary conditions, antecedent infection and traumatism apparently have no etiological influence on the one hand, the disease appears to be related to the infectious processes, and on the other hand to tumor formation. Sojous, in Analytical Medicine, published in 1918, says: "Up to the present time no definite evidence has been produced to show that injury bears a cordial relationship to the disease. If we take the known facts, namely, that blood is formed from red bone marrow, that red bone marrow is found in the diploe of cranial bones in the cancellous tissue of vertebræ, ribs and sternum, also in the ends of long bones, and then check up on the symptoms, tenderness and pain on pressure over the sternum, changes in the bone marrow of the long bones and sternum. It certainly looks reasonable that an injury at the site of blood formation might interfere with normal development of the blood cells.

PROPAGANDA FOR REFORM.

Collosol Calcium.—E. E. Prest (Brit. Med. J., January 14, 1922) recommended a new "collosol" brand of so-called colloidal calcium for the treatment of tuberculosis. T. C. Graves (Lancet, November 4, 1922) discussed "Colloidal Calcium in Malnutrition, Chronic Sepsis and Emotional Disturbances." The publications of Prest and Graves serve as uncritical endorsements of another addition to the Collosol preparations. The conclusions reached by Graves concerning the beneficial action in the treatment of "Emotional Disturbances" do not seem justified by the character of the evidence he presents. Such results as he reports are common experiences without the use of medication. There is no basis, either in theory or in the evidence presented, for administering a calcium salt in colloidal form; if advisable, soluble compounds of calcium such as the lactate and chlorid may be administered hypodermically. Thanks to the timely report of the Council on Pharmacy and Chemistry, the Collosol preparations are not being pushed in the United States, though they are being actively exploited in England. (*Jour. A. M. A.*, Aug. 4, 1923, p. 409.)

C-O-M Not Accepted for N. N. R.—The Council on Pharmacy and Chemistry reports that "C-O-M" is the proprietary, noninforming name under which the H. D. Frees Co., Chicago, exploids a preparation which is claimed to be the solution of magnesium citrate of the U. S. Pharmacopœia, but to have the advantage over the official preparation in that it keeps indefinitely. The Council refused recognition to "C-O-M" because (1) the application of a proprietary name to a pharmacopœial article is irrational and a detriment to rational therapy; (2) as solution of magnesium citrate is readily prepared fresh and of standard quality by pharmacists, the claim of stability is not a sufficient warrant for the use of a proprietary name for an official article; (3) the therapeutic claims for "C-O-M" are unwarranted, and (4) the advertising propaganda is likely to lead to the excessive and ill-advised use of the preparation by the public. (*Jour. A. M. A.*, August 11, 1923, p. 493.)

Two More Electric Diagnoses.—A physician reports that one of his patients became alarmed by a diagnosis of generalized carcinoma made by an osteopath who is a disciple of Albert Abrams. In order to test the diagnostic ability of this disciple of Abrams the physician had the patient send the Abrams disciple a specimen of blood (which was taken from a young rooster who had been confined to his coop since birth) for diagnosis. The diagnosis which was received showed syphilis, gonorrhea, generalized carcinoma, sarcoma of the spine, chronic malaria and diabetis. Another physician reports a diagnosis made by an Abrams follower on a man who is working and by no means ready to die. The diagnosis showed "diminished resistance" (an Abrams euphemism for syphilis), "carcinoma of gall-bladder," "streptococcus," "sarcoma of both kidneys, right worse," "tuberculosis both lungs, upper right and middle left," "sarcoma," "gall-stones," "malaria," and "pneumonia." (*Jour. A. M. A.*, August 11, 1923, p. 493.)

Bacillus Acidophilus Therapy.—A method for the preparation of Bacillus acidophilus milk has been published by Rettger and Cheplin (Arch. Int. Med., Vol. 29:357, (March) 1922). Microscopically, Bacillus acidophilus closely resembles the Bacillus bulgaricus, but cultural methods of distinction have been proposed. The thera-

peutic value of the various lactic acid ferment preparations is discussed in New and Nonofficial Remedies, 1923. While recent publications give evidence in favor of Bacillus acidophilus therapy, W. H. Morriss expresses the belief that whatever beneficial results occurred in the case reported by him were due to some other factor than the actual transformation of the common intestinal bacteria into the acidophilus type of organism. (*Jour. A. M. A.*, August 11, 1923, p. 494.)

Tapeworm Remedies.—Oleoresin of aspidium and pelletierin tannate are the remedies of choice, the first being more popular. To give the remedies the best chance for action, the intestinal contents should be reduced as much as possible by restriction of solid food and evacuation before the treatment. On the morning of the treatment the patient should stay in bed and be given from 6 to 8 gm. of oleoresin of aspidium divided into as many capsules in the course of 10 to 15 minutes. Two hours later a saline cathartic should be administered and repeated every two hours until thorough evacuation has been secured. (*Jour. A. M. A.*, August 11, 1923, p. 495.)

The Chlorin Antiseptics. — The essential attributes of Surgical Solution of Chlorinated Soda-N. N. R. is a definite but mild alkalinity, hypertonicity and presence of the correct amount of sodium hypochlorite. Because hypochlorite solutions are unstable and their active component is not available in solid form, chloramin-T, dichloramin-T and halazone were evolved. The first two have been received as worth-while additions to our materia medica. Because the three products contain their chlorin in its less stable modification, the composition and purity of these products have been watched by the A. M. A. Chemical Laboratory. Recently, P. N. Leech of this laboratory reported on the quality of the market supply of American-made chloramin-T, dichloramin-T and halazone, which are described in New and Nonofficial Remedies. Out of eight specimens of chloramin-T, one was considerably substandard, two were slightly substandard and five were satisfactory. The chloramin-T tablets, chloramin-T pastes and an aromatic powder were satisfactory. Two out of four specimens of a surgical powder were markedly decomposed. All the specimens of Council-accepted dichloramin-T complied with the standards. Re-examination of specimens of the chloramin examined five years previously showed that chloramin-T and halazone are quite stable, but the dichloramin-T specimens had decomposed somewhat. Leech believes that both the hypochlorite preparations and the chloramins are active oxidizing agents because of the positively charged chlorin atom which they contain, and that their antiseptic action depends on this. He determined that the oxidizing power of chloramin-T is much greater in neutral than in even slightly alkalin solutions. From this it is apparent that one strength of a solution of pure chloramin-T may be active as a germicide while a solution of the same strength containing sodium bicarbonate may be ineffective. (*Jour. A. M. A.*, August 18, 1923, p. 581.)

Iodin as a Prophylactic for Goiter.—The conclusion of Marine and Kimball that the administration of iodin constitutes an efficient and safe method of preventing goiter is being amply confirmed. In Switzerland the results appear even more favorable than those reported in this country and the goiter commission of Switzerland has recommended that this method of goiter prevention be instituted as a public health measure throughout the republic. In this country the schools of Akron, Kent and Revana counties, in Ohio, have been using the method as a routine. It has been employed in Berea and Warren, Ohio, and extensively administered in some of the large factories in Cleveland. This year the schools in East Cleveland, Shaker Heights, Warren, Niles and Findlay, Ohio, Grand Rapids, Mich., and Hammond, Ind., are using tablets, each containing 10 mg. of iodin in the form of an organic iodid and each girl takes one tablet a week throughout the year.—(*Jour. A. M. A.*, August 18, 1923, p. 582.)

Administration of Iodid for Goiter.—For the prophylaxis of goiter, Marine and Kimball employed 2 gm. of sodium iodid given in 0.2 gm. doses daily for ten consecutive school days. This was repeated twice yearly. Marine and Kimball state that this amount of iodid is excessive and that 1 gm. of sodium iodid distributed over a longer period would be better. Sodium iodid may be prescribed in solution, a dose to a teaspoonful. If the patient be furnished with a small quantity of potassium iodid—say 1 gm.—and advised to mix it thoroughly with 1 kg. of ordinary table salt for occasional seasoning of his food at the table, he will get all the iodid that is necessary for prophylactic purposes and in an entirely

unobjectionable manner. (*Jour. A. M. A.*, August 18, 1923, p. 598.)

BISMUTH PREPARATION IN SYPHILIS. — The Council has issued a statement of the present status of bismuth preparations in the treatment of syphilis. In this report the history of the use of bismuth salts in the treatment of syphilis is reviewed, the evidence for the value of bismuth salts as compared with mercury preparations and arsphenamine is considered and the dosage and danger of untoward effects are discussed. The statement of the Council concludes with the following summary:

1. Bismuth preparations have a sufficient experimental basis both for their favorable effects and limitations. The advantage consists in their distinct action on experimental syphilis. The limitations are clear, if one considers the disproportion between the large dose, which is necessary to sterilize an animal, and the small dose, which can be tolerated by man. The available information appears to show that bismuth preparations will not cure syphilis, when used alone.

2. Bismuth treatment is not usually injurious if the necessary precautions (observations for beginning stomatitis, examination of urine, etc.) are observed. Intravenous injection is to be strictly avoided. The therapeutic effect of bismuth is rated by the majority of authors between arsphenamine and mercury. Bismuth compounds may be valuable in cases in which the patients are intolerant to the other drugs used in the treatment of syphilis or resistant to them, as shown by a persistent positive Wassermann reaction. (*Jour. A. M. A.*, August 25, 1923, p. 661.)

THE THYROID HORMONE.—The fact that the iodin-bearing compound, thyroxin, which has been isolated from thyroid tissue, has a marked physiologic potency, has led many persons to speak of it offhand as the "active principle" of the thyroid glands. However, Reid Hunt has carried out tests which indicated that for certain functions at least, thyroxin shows less potency than an equivalent dose of iodin in the form of the entire thyroid gland. One is led to ask, whether the iodized protein fragment represented by thyroxin retains all of the specific physiologic action of the real thyroid hormone. Hektoen, Carlson and Schulhof report that they have detected the presence of a thyroid product, thyroglobulin, in the lymph issuing from the thyroid gland, but failed to detect the same protein in the blood stream.—(*Jour. A. M. A.*, August 25, 1923, p. 665.)

ALBARGIN NOT ACCEPTED FOR N. N. R.—The Council on Pharmacy and Chemistry declares Albargin inadmissible to New and Nonofficial Remedies because (1) it is an unessential modification of silver nitrate and (2) the therapeutic claims made for it are unwarranted. Albargin is a product of the Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst, a. m., Germany, marketed in the United States by the H. A. Metz Laboratories, New York. It is claimed to be a compound of silver nitrate with gelatose containing 15 per cent of silver. Albargin is claimed to combine the advantages of albumin compounds of silver and of silver nitrate. It is claimed to dialyze through animal membrane and, therefore, to possess far greater power than other albumin compounds of silver. It is claimed to produce neither irritation nor pain. The Council found that the silver of Albargin was not combined with the gelatose, but is in the same condition as the silver of silver nitrate; that it does not dialyze through animal membrane and that its antiseptic value is the same as that of a silver nitrate solution of equal silver content. (*Jour. A. M. A.*, August 25, 1923, p. 677.)

COATING FOR PILLS TO RESIST GASTRIC JUICE. —The attempt to prepare pills, tablets or capsules which will pass the stomach unchanged but which will disintegrate in the intestine has not proved very successful. In the main the attempt has been to coat such pills, tablets or capsules (a) with keratin or phenyl salicylate (salol), (b) with gelatin rendered insoluble by treatment with formaldehyde, and (c) by mixing the drug with wax, solid fats or paraffin. Keratin coating has the objection that the coating is brittle and that it requires the administration of a considerable dose of phenyl salicylate. The difficulty in the coating with hardened gelatin is that, if the treatment with formaldehyde is insufficient, the pills will not pass the stomach unchanged and, if the treatment is prolonged, the coating will not disintegrate in the intestin. Favorable reports have been published of the method of combining drugs such as sodium carbonate, potassium iodid, sodium salicylate, etc., with mutton suet and paraffin or with a mixture of beeswax and castor oil previously melted together. (*Jour. A. M. A.*, August 25, 1923, p. 679.)

DRAFT OF PROPOSED MODEL STATE NARCOTIC LAW.

Under authority of the House of Delegates of the American Medical Association, the Council on Health and Public Instruction undertook the preparation of a model state narcotic law. The following is a working draft of such a law, approved by the Council. This draft is the result of a conference between representatives of the Council on Health and Public Instruction, representatives of various organizations within the drug trade and representatives of other agencies. Upon completion of this draft, the conference referred it back to the several organizations represented for consideration. Criticisms and suggestions are invited, which should be mailed to *The Bureau of Legal Medicine and Legislation, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.*

A MODEL STATE NARCOTIC DRUG LAW.

SECTION 1.—Definitions, as Used in This Act:

(1) *Person.*—The term "person" includes any corporation, association, copartnership or individual.

(2) *Physician.*—The term "physician" means any individual authorized to practice medicine under the laws of this state.

(3) *Apothecary.*—The term "apothecary" means any person authorized to practice pharmacy under the laws of this state.

(4) *Dentist.*—The term "dentist" means any individual authorized to practice dentistry under the laws of this state.

(5) *Veterinarian.*—The term "veterinarian" means any individual authorized to practice veterinary medicine under the laws of this state.

(6) *Manufacturer.*—The term "manufacturer" means a person who by compounding, mixing, or other process of manufacture produces or prepares habit-forming drugs for sale on written orders or who manufactures, produces or prepares any preparation which corresponds to the description enumerated in Section 4 of this act, and does not include an apothecary who compounds habit drugs to be sold or dispensed on prescription.

(7) *Wholesaler.*—The term "wholesaler" means a person who deals in habit-forming drugs on written orders.

(8) *Sale.*—The term "sale" includes sale and offer for sale.

(9) *Dispense.*—The term "dispense" includes distribute, leave with, give away, dispose of and deliver to a person or to his agent to be delivered to him.

(10) *Administer.*—The term "administer" means only administration by a person authorized to administer habit-forming drugs or under his orders by a nurse, hospital attendant, intern or by any other person designated by him.

(11) *Coca Leaves.*—The term "coca leaves" includes coca leaves, cocain, or any compound, manufacture, salt, derivative or preparations thereof, including any of their salts or any compound of any of them, but shall not include decocainized coca leaves or preparations made therefrom or other preparations of coca leaves which do not contain cocain.

(12) *Opium.*—The term "opium" includes opium, morphin, codein, diacetyl morphin (heroin), and any compound, manufacture, salt derivative or preparation of any of them; but the preparations described in Section 4 of this act shall not be deemed to be compounds, derivatives or preparations of opium or of its salts or derivatives.

(13) *Habit-Forming Drugs.*—The term "habit-forming drugs" means coca leaves or opium.

(14) *Written Order.*—The term "written order" means an order on an order form issued by, or other order acceptable to, the Commissioner of Internal Revenue of the United States under the Harrison Narcotic Act.

(15) *Number and Gender.*—The singular includes the pleural, the masculine includes the feminine and neuter.

(16) *Harrison Narcotic Act.*—The term "Harrison Narcotic Act," when used in this act, means the act of Congress entitled, "An act to provide for the registration of, with collectors of internal revenue, and to impose a special tax upon all persons who produce, import, manufacture, compound, deal in, dispense, sell, distribute, or give away opium or coca leaves, their salts, derivatives, or preparations and for other purposes"; approved Dec. 17, 1914, as amended.

SECTION 2.—Acts Prohibited: No person shall possess, sell, distribute, administer, dispense or prescribe any habit-forming drugs except as provided in this act.

SECTION 3.—Sale on Written Orders.

(1) A manufacturer, wholesaler or apothecary may sell, distribute or dispense habit-forming drugs on a written order:

(*a*) To any manufacturer, wholesaler or apothecary;

(*b*) To any physician, dentist, or veterinarian;

(*c*) To any public or private hospital;

(*d*) To any hospital or institution licensed for the treatment of drug addiction;

(*e*) To any person in charge of a laboratory where habit-forming drugs are used for scientific or medical research, but only for such use in such laboratory;

(*f*) To any person in the employ of the United States or of this state or any political subdivision thereof, purchasing or receiving the drugs in his official capacity;

(*g*) To a captain or proper officer of a ship upon which no regular physician is employed for the use of officers and crew for medical needs of the captain and crew when not in port.

Provided that both parties to the transaction, if required to be registered under the Harrison Narcotic Act, are so registered.

NOTE.—Subdivision (g) is inserted for application to states having ports.

(2) A written order shall be signed by the person giving it or by his duly authorized agent and shall be kept for two years by the person filling it in such a way as to be readily accessible for inspection and shall be subject to inspection by any public officer or employee engaged in the enforcement of this act.

(3) Possession of habit-forming drugs obtained as provided in this section shall be legitimate if possessed

in the regular course of business, occupation, profession, employment or duty of the possessor.

SECTION 4.—Preparations and Remedies:

A person may manufacture, sell, dispense or possess preparations and remedies not otherwise prohibited by law, which contain not more than 2 grains of opium, or more than one-quarter grain of morphin or more than one-eighth grain of diacetyl morphin (heroin), or more than 1 grain of codein, or any salt or derivative of any of them in 1 fluid ounce; or liniments, ointments or other preparations which are prepared for external use only, except liniments, ointments and other preparations which contain cocain or any of its salts or any synthetic substitute for them, provided such remedies and preparations are manufactured, sold, dispensed or possessed as medicines and not for the purpose of evading this act.

SECTION 5.—Professional Use:

(1) *Veterinarians.*—A veterinarian, in good faith, in the course of his professional practice only and not for use by a human being, may prescribe, administer or dispense habit-forming drugs.

(2) *Dentists.*—A dentist, in good faith, in the course of his professional practice only, may prescribe for, administer or dispense habit-forming drugs to patients under his immediate treatment.

(3) *Physicians.*—A physician, in good faith, in the course of his professional practice only, may prescribe, administer or dispense habit-forming drugs.

SECTION 6.—Prescriptions:

(1) Any apothecary may sell or dispense habit-forming drugs to any individual upon a written prescription of a physician, dentist or veterinarian, dated and signed on the day when issued and bearing the full name and address of the patient and the name, address and registry number of the practitioner under the Harrison Narcotic Act. The person filling the prescription must write the date of filling and his own signature upon the face of the prescription, and the prescription must be retained on file by the apothecary filling it for two years so as to be readily accessible for inspection, and it shall be subject to inspection by any public officer or employee engaged in the enforcement of this act.

(2) No such prescription shall be refilled except prescriptions specifying codein, or a preparation containing codein, and no other compound of opium or coca leaves.[1]

SECTION 7.—Record to Be Kept: Every physician, dentist, and veterinarian shall keep a record of all habit-forming drugs dispensed by him, showing the amount dispensed, the date, the name and address of the patient, and, in case of a veterinarian, the name and address of the owner of the animal for which such drugs are dispensed or distributed. The record shall be kept for two years from the date of dispensing such drugs so as to be readily accessible for inspection, and shall be subject to inspection by the proper authorities.

SECTION 8.—Label: Whenever an apothecary, pursuant to a written prescription, shall dispense habit-forming drugs or whenever a physician, dentist or veterinarian shall dispense any of such drugs, he shall securely affix to the container of such drugs a label stating in legible English the name and address of the physician, dentist or veterinarian prescribing them and of the apothecary dispensing them and the date when and the name and address of the person for whom or the owner of the animal for which the drug is dispensed.

SECTION 9.—Authorized Possession of Drugs by Individual: A person to whom or for whose use any habit-forming drug has been dispensed by an apothecary, physician or dentist, or the owner of an animal for which any such drug has been dispensed by a veterinarian may lawfully possess it in the container delivered to him by the person dispensing the drug.

SECTION 10.—Physical Examination Required: A physician, dentist or veterinarian shall not administer, dispense or prescribe any habit-forming drugs except after a physical examination of the person for whom or of the animal for which the drug is intended.

SECTION 11.—Exemption from Restrictions:

(1) The provisions of this act restricting the possession of habit-forming drugs shall not apply to common carriers or warehousemen or their employees engaged in the lawful transportation or storage of such drugs, or to public officers or employees while engaged in the performance of their official duties or to temporary incidental possession by employees or agents of persons lawfully entitled to possession, or by persons whose possession is for the purpose of aiding public officers in the performance of their official duties.

(2) This act shall not apply to acts done, or to habit-forming drugs possessed, in the course of interstate or foreign commerce.

SECTION 12.—Drugs Delivered to Local or State Department of Health: All drugs that have been seized and judicially determined to have been unlawfully possessed or the title to which has ceased and which have come into the hands of a peace officer, shall, upon the direction of a court or magistrate, be delivered to the department of health, which shall keep record of its receipt, and shall be delivered by it to the collector of internal revenue for the district in which the drugs were seized, from whom a receipt shall be required.

SECTION 13.—Use of Federal Forms: Whenever by this act any record is required to be kept or any order blank or prescription to be used, a record kept on any order blank prescription used under the Harrison Narcotic Act or under rules or regulations made thereunder shall be sufficient fulfillment of the requirement of this act.

SECTION 14.—Revocation of Licenses:

(1) On conviction of any physician, dentist, veterinarian or apothecary for wilful violation of any of the provisions of this act, a copy of the sentence and of the opinion of the court or magistrate, if any be filed, shall be sent by the clerk of the court, or by the magistrate, to the board or officer having power to suspend or revoke the license or registration of the person convicted, for such action as the board or officer deems proper.

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1. This provision is at present contrary to the regulations now in force under the Harrison Narcotic Act and is approved subject to revision of the regulations by the Treasury Department to conform to this provision of the proposed state model law. The conference expressed its belief that every effort should be made to obtain modifications of the existing Treasury Department regulations so that there may be agreement between them and the proposed text of the model law.

(2) At the request of such board or officer, the clerk or magistrate shall send to such board or officer a transcript of the record or of the proceedings in a court not of record, and such portion of the evidence as may be requested.

SECTION 15.—Penalties: A violation of any of the provisions of this article shall constitute a misdemeanor.

NOTE.—No definite penalty is included, as the question of how severe the penalty should be is left to each state. It is usual in the states to make a violation a misdemeanor, and usually the penalties are fixed in the state statute. Sometimes it is enough to say that a violation "shall constitute a misdemeanor," depending upon a provision in the penal law of the state, as in New York, fixing the penalty for misdemeanor, but it will usually be found advisable to fix the penalties expressly in the statute.

SECTION 16.—Enforcing Authority:

NOTE.—No particular enforcing authority has been insisted on, since the existing statutes show that different states have different opinions as to the proper enforcement. Furthermore, if the state health authority is made the enforcing authority, it will be necessary in each state to use the proper term to describe that authority, sometimes the department of health, sometimes the health commissioner or board of health. In some cases a department of public safety or commissioner of public safety will be the proper enforcing authority. In any case, however, the power to make rules and regulations should be phrased as follows:

"The department may make rules and regulations necessary for the enforcement of this act, but such rules and regulations shall be kept in conformity with the rules and regulations made under the Harrison Act."

SECTION 17.—Short Title: This act shall be known and may be cited as "The Narcotic Drug Act."

MEMORANDA

1. TITLE.—The committee has judged it best not to propose any title for the act, since the requirement in state constitutions respecting title are dissimilar.

2. ADMINISTRATION.—The committee does not recommend that any definite state agency, such as the health authority, administer the act, but leaves this question to the choice of each state. It recommends that the bill be reviewed carefully after the administrative authority has been determined upon to be sure that the proper terms are used to designate the administering authority in the bill.

3. DEFINITIONS.—Many of these will be unnecessary in certain states. For example, Section 1 (15) will be unnecessary in a state like New York, as it is already included in the general construction act. The definitions of physician, apothecary, dentist and veterinarian will need to be extended in most states by a reference to statutes which provide for the licensing of these professional persons in order to get a complete description. For example, in New York the term "physician" would have to be defined as follows:

"The term 'physician' means a licensed practitioner of medicine as defined by article eight of this chapter," etc. In Massachusetts the statute refers to a special chapter of the revised laws which describes "druggist, apothecary or pharmacist," the three words being used. In Massachusetts, physicians, dentists and veterinarians are defined as persons "duly registered and authorized to practice their profession." Pennsylvania describes them as "licensed physician, dentist or veterinarian," without definite reference. It may be necessary to add definition in certain cases. For example, in New York the term medicine is defined in the public health law, Section 236 (9), so that a similar definition would be advisable here or a reference to the public health law definition, in order to make sure that the same thing was intended. In other states, which have not for other purposes defined medicine, this would seem to be unnecessary.

Since the conference group agreed to limit its discussion and proposals to those features of legal restriction and control which are already embodied in the federal (Harrison) act and the regulations under this act, and, since the representation of the medical profession in the conference was small and not authorized to express opinions upon medical practice and social or relief measures, ancillary to narcotic drug control, the suggested uniform state law as presented above makes no mention of two elements essential to an adequate state program for prevention and relief, namely, provision for commitment of addicts and treatment of addicts by private practitioners. Whether or not a state enacts such a law as is here proposed there will continue to be felt, by those who come in contact with the administration of the Harrison Narcotic Law, a need of definite provision for compulsory or voluntary commitment of addicts for treatment, and some policy will have to be established and followed which will prevent the small minority of physicians who are willing to abuse their professional privileges for profit from continuing for indefinite and unnecessarily long periods to supply the drug to addicts who do not require it for the treatment of disease and to relieve suffering, ostensibly with the object of accomplishing a safe and gradual withdrawal and cure.

Although the American Public Health Association, at its meeting in November, 1921, expressed the opinion that the narcotic drug question concerned chiefly the police and the practice of medicine and was not properly a public health question, the probability of having the department of health of states designated as the administrative authority responsible for carrying out the intent of state law in this field, justifies calling attention of professional health workers to the efforts of representatives of the various interested groups to bring about a desirable simplicity and uniformity of legislation.

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THE REWARD OF GENIUS.

The Canadian government has awarded Dr. F. G. Banting a life annuity of $7,500 as the discoverer of insulin. In commenting on the award, the New York *Times* points out that professional ethics prevents Dr. Banting from exploiting the commercial possibilities of the remedy and that fame will not pay grocers' bills. "The amount suggested as his honorarium seems large only because such appropriations of public funds are so rare. After all, it is only the interest on $150,000, and compared with the fortunes made by other inventors—the Fords, the Edisons, the McCormicks and their like—it seems absurdly small." The *Times* urges that the action taken by Canada be an example to the rest of the world. "National governments have a duty in this matter, and one which they rarely have recognized. For the most part they have left the maintenance of scientific research to the generosity of individuals or of the few private corporations which have arrived at a realization of what 'pure science' can do for them. . . . A government, if conducted with sufficient intelligence, would change all this. It would establish facilities for determining just what men had rendered or were likely to render services so widely beneficial that everybody should be expected to pay for them. Then it should make due provision for acquiring a discovery or invention of general benefit and offering it freely to anybody in the country, or in the world, who wants to use it." In a recent address before the British Science Guild, Sir Ronald Ross, noted for his discoveries in relation to the control of malaria, also drew attention to the neglect accorded scientists in his country and the United States:

One of the worst cases was that of W. M. W. Haffkine, who in 1896 discovered the inoculation treatment to cure cholera and plague in India. Not being a medical man, Mr. Haffkine could have patented his discovery and made a fortune. But he set to work to manufacture millions of tubes of this vaccine, and thereby saved millions of lives. An accident occurred, and although he was not responsible, he was made the scapegoat by the authorities in India. He was hounded out of the country, and came home, so to speak, fettered with the chains of Columbus about his feet. He was treated vilely—and he was one of the greatest benefactors of the last century . . . Walter Reed the American, who discovered that yellow fever was carried by the mosquito, was given some menial employment, feeling pulses, administering castor oil, and looking at dirty tongues for a couple of years. And he was allowed to die apprehensive as to how his wife and family could sustain life.

Sir Ronald advised that there should be some state compensation for the research worker who contributes his work for the benefit of all mankind. It is encouraging to find this development of a sound public opinion in favor of properly rewarding scientists. Discoveries such as that of insulin are not made every day or even every decade. The watchdogs of the public treasury need fear no great drain on the public purse from such awards; and, even if there were a drain, the saving in lives and in the cost of disease would more than compensate for the sums expended.—*Jour. A. M. A.*

FLORIDA RAILWAY SURGEONS' ASSOCIATION.

The Florida Railway Surgeons' Association was called to order in its fourth annual meeting at the Seminole Hotel, Jacksonville, on May 14th, 1923, by the president, Dr. L. S. Oppenheimer, of Tampa, who also responded to the welcome address which was delivered by Dr. J. H. Pittman, of Jacksonville.

After the reading and adoption of the minutes of the last regular meeting, a list of applicants for membership was read and they were elected. The gain in membership for the year showed a 30 per cent increase. At present over 50 per cent of the railway surgeons in the state belong to the association.

An amendment was adopted allowing members to retain their membership in the association after retiring from their surgeonship unless such retirement was for unprofessional conduct.

The attendance and interest displayed was far the best in the history of the association.

Dr. H. C. Dozier, of Ocala, was elected president; Dr. J. C. Davis, of Quincy, vice-president; Dr. E. W. Warren, of Palatka, secretary.

Committee on Scientific Program for the next meeting: Dr. Wm. S. Manning, of Jacksonville; Dr. S. C. Wood, of Leesburg, and Dr. G. C. Tillman, of Gainesville. Committee on Arrangements for next meeting: Dr. J. S. McEwan, Orlando, and Dr. Wm. Osenbach, Orlando. Next meeting place, Orlando, Fla.

E. W. Warren, *Secretary.*

COUNTY SOCIETY NEWS.

COLUMBIA

Dr. R. B. Harkness, together with Mrs. Harkness, spent a delightful two weeks' vacation in Alabama the latter part of August. The doctor declares that Birmingham, Tuscaloosa and other places in Alabama look good, but Florida looks better than ever.

Drs. J. H. Dyer and Herbert Calwell have recently reported for duty at U. S. Veterans' Hospital 63, Lake City. Major Dyer will have charge of the surgical service while Major Calwell will serve on the general medical service.

Drs. L. M. Anderson and R. B. Harkness, Lake City, plan to attend the Washington session of the Southern Medical Association next month.

Dr. T. H. Bates will spend the greater part of October visiting in Texas and Louisiana.

DUVAL.

At the July meeting of the Society, Dr. A. H. Freeman presented an unusually interesting clinical case of double mastoiditis with sinus thrombosis. The patient was examined by those present.

The August meeting of the Society was held at the Seminole Hotel on the 7th. Dr. H. M. Taylor read a paper on "The Causes and Prevention of Otologic Conditions Following Swimming and Diving," by special request. Dr. C. D. Rollins presented a paper on "The Toxemias of Pregnancy."

At the September meeting, Dr. T. Z. Cason read a paper entitled "Diastolic Blood Pressure Observations with Report of an Unusual Case." Dr. R. B. McIvor presented an unusual clinical case of elephantiasis of the penis and scrotum of eight years' duration.

HILLSBORO.

Dr. J. C. Dickinson, President Hillsboro County Medical Society, expects to leave for Chicago in the next few days to attend a meeting of the American Roentgen Ray Society. He expects to be away about two weeks.

Dr. J. J. Saxton has recently returned from New York where he has been doing special work in the New York Skin and Cancer Hospital. He has opened offices in the Citizens Exchange Building, and will confine his work to Dermatology.

Dr. D. D. Martin is in New York attending Pediatric clinics. He expects to be back the latter part of the month.

Dr. W. P. Adamson has just returned from a vacation spent in Asheville, N. C.

Dr. L. J. Efird is sojourning in Canada, and will return about the first of October.

Dr. A. C. Ives is doing some special work on the chest at Asheville, N. C.

Dr. F. G. Blake has just returned from his vacation spent in Virginia.

Dr. N. L. Spengler is in the city looking over Tampa and its environs with a view of locating in this section.

Dr. J. B. Wallace has just returned from a vacation spent in Canada.

ORANGE.

Dr. Lawrence Ingram, President of the Orange County Medical Society, has just returned from Vienna where he spent the summer doing research work and taking advance courses of the nose and throat under Drs. Hajeck and Newman clinics.

Dr. Meredith Mallory has spent the past month in relaxation at Daytona Beach.

At the August meeting, Dr. R. L. Miller presented an excellent paper on ethmoidal infection and Dr. J. A. Ford on post-operative adhesions.

Dr. C. E. Coffin, of Winter Park, has returned from a vacation of three months spent in Bats Cove, N. C.

POLK.

Dr. C. W. Love, of Lakeland, is in New Orleans doing work in X-ray and gastroenterology. He will return November 1st to become associated with Dr. Herman Watson.

Dr. R. R. Sullivan, of Lakeland, has returned from a three weeks' trip to New York, Philadelphia and Baltimore.

Dr. G. H. Carefoot, of Ft. Meade, has returned from a six weeks' stay in the mountains of North Carolina.

Dr. G. C. Freeman, of the United States Navy, has resigned and located in Lakeland to do internal medicine.

REVIEWS FROM CURRENT LITERATURE

TREATMENT OF HYPERTHYROIDISM.

Groover, Thomas A.; Christy, A. C., and Merritt, E. A.: "A Review of the Treatment of Hyperthyroidism by all Methods, with a Summary of the Authors' Experience with Roentgen Ray Therapy." *The American Journal of Roentgenology and Radiology*, May, 1923, p. 385.

The authors refer briefly to the history of the disease and the early work of Parry, Moebius, Graves, Stokes, Basedow and others. Credit is given to Moebius for first recognizing the condition as a morbid function of the thyroid gland and so placed its therapy on a rational basis.

The basal metabolism rate is taken as the only accurate method of diagnosis and guide to treatment. Treatment is discussed under three heads:

1. General management.
2. Surgical treatment.
3. Roentgen Ray treatment.

Under general management: Importance of rest, proper diet, and their influence on tachycardia, nervous and gastro-intestinal disturbances, are discussed, and it is pointed out that roentgenologists frequently overlook their importance in the treatment of this condition.

The surgical treatment is taken up at length and due credit is given to such eminent surgeons as Koher, Mayo, Crile, and others. The classification of patients as to surgical risk at the Mayo clinic, based upon their metabolic rate, is emphasized. At this clinic patients are divided into three groups. Those with a rate not increased above 55 per cent are classed as operable; between 55 and 65 as doubtful and best held under observation, especially if there has been a recent loss of weight; those above 70 are classed as inoperable, and rest and medication advised until their general condition is improved. The death rate under surgical treatment, as quoted from the clinics of Mayo and Crile, is from 2 to 4 per cent, and is necessarily higher in the hands of the average surgeon.

Statistics published in 1917 show of 100 cases operated on in 1914 and 1915 at Mayo's clinic, 65.8 per cent as cured, 13.6 per cent markedly improved, and 5.6 per cent slightly improved; 15 per cent as dead from all causes.

Under the head of Roentgen treatment it is pointed out that only since 1898, when the Coolidge tube became available, has accurate work been possible.

The work of Pfahler and his publications are discussed. Dr. Pfahler, in 1915, stated that his results showed that Roentgen Ray treatment

offered equal chance with surgery for cure in hyperthyroidism, and should be used first as it was accompanied by much lower death rate than surgical treatment.

With this opinion the authors are in complete accord and their statistics include 114 cases; 32 are listed as cured; 24 greatly improved and further treatment probably not necessary; 4 have been operated upon, but in only one had radiotherapy been given a sufficient trial; 3 have died, one from influenza, one from tuberculosis and one from hyperthyroidism; 3 cases still have a slightly increased metabolic rate and further treatment is probably indicated.

Their conclusions are as follows:

1. Comparison of results obtained by surgeons and roentgenologists are about equal in permanent cures.

2. Patients should have Roentgen treatment first and thyroidectomy only if they fail to respond.

3. The general management is of first importance, whether ultimate treatment is surgical or Roentgen Ray.

GASTRO-ENTEROSTOMY.

Deaver John B.: "Gastro-Enterostomy." *Surgery, Gynecology, and Obstetrics,* August, 1923, p. 144.

When radical operation (subtotal gastrectomy) is out of the question, anterior gastro-enterostomy is now very seldom done; in fact, the only reason for attempting it is when, because of existing pathology, the posterior method is impossible.

The chief objection to anterior gastro-enterostomy, as usually performed, is the presence of a long loop of jejunum.

Gastro-enterostomy for ulcer was first performed by Doyen in 1893. Ulcer pain is present even without gastric acidity, and furthermore that pain can be controlled (in the presence of gastric acidity), not only by the administration of alkalies, but by actually putting acid into the stomach.

Gastro-enterostomy inadvisedly performed in the absence of a lesion, intrinsic to the stomach or the duodenum, may result in very positive derangement of the digestive function which did not exist before. Gastro-enterostomy for ulcer is both a physiological and an anatomical operation.

With the exception of very small ulcers which can be excised and the closure made without in any way altering the normal motor function, I think the excision of the ulcer plus a gastro-enterostomy is the accepted procedure for the majority of surgeons, especially when that portion of the digestive tract in which the ulcer is located is freely deliverable. Since ulcer of the duodenum very rarely developes into cancer, it is not so imperative to destroy or remove this lesion, although perforation and hemorrhage must be kept in mind as possible complications, the former occurring in comparatively high percentage of cases.

Gastro-enterostomy alone is indicated in cicatricial obstruction of the pylorus and in extensive, benign ulcerative disease of the pyloric end of the stomach, where the condition of the patient will not warrant a more extensive operation.

Gastro-enterostomy alone is indicated in large ulcers involving much of the lesser curvature or of the posterior wall of the stomach, with adhesions to the liver or the pancreas, which forbid excision or subtotal gastrectomy.

Gastro-enterostomy alone, I would also say, is indicated in gastric or duodenal ulcer with recurrent hemorrhage which forbids removal of the ulcer.

Gastro-enterostomy is rarely necessary in the operation for saddleback ulcer of the lesser curvature causing hour-glass constriction as circular resection suffices in practically all cases; but it may occasionally be best to make a gastro-enterestomy after the circular resection. Gastro-enterostomy alone in carcinoma is not by any means a very satisfactory procedure, yet sometime it does prolong life a short time.

I do not believe that any operation for peptic ulcer will give uniformly satisfactory results unless primary foci of infection are sought for and removed. I am fully in accord with my medical friends, that the acute and the subacute peptic ulcers belong to them, but when they become chronic, which I believe the most of them do, they are then surgical and to treat them medically is to court disaster.

I cannot help repeating what I have so often said that it is after operation that the medical treatment of ulcer is in place. The cooperation of the internist with the surgeon is necessary following operation; for too frequently a good surgical result has been forfeited because of dietetic indiscretions of the neglected patient.

NEW AND NONOFFICIAL REMEDIES.

PROTEIN MIXTURES FOR DIAGNOSIS. — Mixtures of two or more pollen, epidermal or food protein preparations. These mixtures are supplied in order that the number of skin tests to determine sensitiveness to proteins may be reduced. If sensitiveness to a given protein mixture is found, then tests are made with the individual proteins contained in the mixture. (See Pollen and Epidermal Extracts and Biologically Reactive Food Proteins, New and Nonofficial Remedies, 1923, p. 234.)

GROUP ALLERGENS DIAGNOSTIC-SQUIBB. — A mixture of two or more allergens-Squibb in equal proportions. These protein mixtures are used to determine sensitiveness to proteins (see preceding article, Protein Mixtures for Diagnosis). Group Allergens-Squibb are marketed in vials containing 0.025 gm. The following Group Allergens-Squibb have been accepted: Group Allergens-Squibb Type 1 (beet, carrot, parsnip, radish, turnip); Group Allergens-Squibb Type II (cabbage, celery, lettuce, onion, spinach); Group Allergens-Squibb Type III (artichoke, asparagus, cauliflower, rhubarb, string bean); Group Allergens-Squibb Type IV (cucumber, eggplant, pumpkin, squash, tomato); Group Allergens-Squibb Type VI (apricot, cherry, peach, plum, prune); Group Allergens-Squibb Type VII (cantaloupe, grapefruit, lemon, orange, watermelon); Group Allergens-Squibb Type VIII (apple, banana, pear, pineapple, fig); Group Allergens-Squibb Type IX (almond, chestnut, filbert, hazelnut, peanut); Group Allergens-Squibb Type X (black walnut, Brazil nut, English walnut, hickory nut, pecan); Group Allergens-Squibb Type XI (barley, buckwheat, corn, oat, rice); Group Allergens-Squibb Type XII (beef, goat, horse, pork, mutton); Group Allergens-Squibb Type XIV (chicken, duck, goose, guinea-hen, turkey); Group Allergens-Squibb Type XV (bluefish, codfish, haddock, halibut, mackerel); Group Allergens-Squibb Type XVI (butterfish, salmon, sea bass, sole, whiting); Group Allergens-Squibb Type XVII (clam, oyster, crab, lobster, scallops, shrimp); Group Allergens-Squibb Type XVIII (black pepper, ginger, mustard, paprika, vanilla); Group Allergens-Squibb Type XIX (cocoa, coffee, tea); Group Allergens-Squibb Type XX (egg—all proteins, cow's milk—all proteins, goat's milk—all proteins); Group Allergens-Squibb Type XXI (cat—hair, cow—hair, dog—hair, horse—dander, rabbit—hair); Group Allergens-Squibb Type XXII (chicken, duck, goose); Group Allergens-Squibb Type XXVI (micrococcus catarrhalis, pneumococcus I, pneumococcus II, pneumococcus III, pneumococcus IV); Group Allergens-Squibb Type XXVII (staphylococcus aureus, staphylococcus albus, staphylococcus citreus, streptococcus pyogenes, streptococcus viridans). E. R. Squibb & Sons, New York.

POLLEN ANTIGENS-LEDERLE.—In addition to the products listed in New and Nonofficial Remedies, 1923, p. 239, the following have been accepted: Annual Salt Bush Pollen Antigen-Lederle; Bermuda Grass Pollen Antigen-Lederle; Cocklebur Pollen Antigen-Lederle; Johnson Grass Pollen Antigen-Lederle; Mountain Cedar Pollen Antigen-Lederle; Mugwort Pollen Antigen-Lederle; Oak Pollen Antigen-Lederle; Orchard Grass Pollen Antigen-Lederle; Perennial Rye Grass Pollen Antigen-Lederle; Rabbit Bush Pollen Antigen-Lederle; Redroot Pigweed Pollen Antigen-Lederle; Russian Thistle Pollen Antigen-Lederle; Spiny Amaranth Pollen Antigen-Lederle; Yellow Dock Pollen Antigen-Lederle. Lederle Antitoxin Laboratories, New York. (*Jour. A. M. A.*, Aug. 4, 1923, p. 393.)

PROTEIN EXTRACTS DIAGNOSTIC-P. D. & Co.—Protein extracts in the form of paste, the base of which is a mixture of glycerin and powdered boric acid. One part represents one part of original material. For a discussion of the actions, and uses and dosage, see Pollen and Epidermal Preparations and Biologically Reactive Food Proteins, New and Nonofficial Remedies, 1923, p. 234. Protein Extracts Diagnostic-P. D. & Co. are marketed in collapsible tubes containing sufficient material for fifty tests. The following products have been accepted: Almond Protein Extract Diagnostic-P. D. & Co.; Apple Protein Extract Diagnostic-P. D. & Co.; Asparagus Protein Extract Diagnostic-P. D. & Co.; Banana Protein Extract Diagnostic-P. D. & Co.; Barley Protein Extract Diagnostic-P. D. & Co.; Bean (Lima) Protein Extract Diagnostic-P. D. & Co.; Bean (Navy) Protein Extract Diagnostic-P. D. & Co.; Bean (String) Protein Extract Diagnostic-P. D. & Co.; Beef Protein Extract Diagnostic-P. D. & Co.; Beef Serum Protein Extract Diagnostic-P. D. & Co.; Beet Protein Extract Diagnostic-P. D. & Co.; Blackberry Protein Extract Diagnostic-P. D. & Co.; Black Pepper

Protein Extract Diagnostic-P. D. & Co.; Black Walnut Protein Extract Diagnostic-P. D. & Co.; Bluefish Protein Extract Diagnostic-P. D. & Co.; Brazil Nut Protein Extract Diagnostic-P. D. & Co.; Buckwheat Protein Extract Diagnostic-P. D. & Co.; Butternut Protein Extract Diagnostic-P. D. & Co.; Cabbage Protein Extract Diagnostic-P. D. & Co.; Cantaloupe Protein Extract Diagnostic-P. D. & Co.; Carrot Protein Extract Diagnostic-P. D. & Co.; Cat Hair Protein Extract Diagnostic-P. D. & Co.; Cattle Hair Protein Extract Diagnostic-P. D. & Co.; Celery Protein Extract Diagnostic-P. D. & Co.; Cheese Protein Extract Diagnostic-P. D. & Co.; Cherry Protein Extract Diagnostic-P. D. & Co.; Chestnut Protein Extract Diagnostic-P. D. & Co.; Chicken Protein Extract Diagnostic-P. D. & Co.; Chicken Feathers Protein Extract Diagnostic-P. D. & Co.; Clam Protein Extract Diagnostic-P. D. & Co.; Cocoa Protein Extract Diagnostic-P. D. & Co.; Codfish Protein Extract Diagnostic-P. D. & Co.; Coffee Protein Extract Diagnostic-P. D. & Co.; Corn Protein Extract Diagnostic-P. D. & Co.; Crab Protein Extract Diagnostic-P. D. & Co.; Cucumber Protein Extract Diagnostic-P. D. & Co.; Dog Hair Protein Extract Diagnostic-P. D. & Co.; Duck Protein Extract Diagnostic-P. D. & Co.; Duck Feathers Protein Extract Diagnostic-P. D. & Co.; Egg (all proteins) Protein Extract Diagnostic-P. D. & Co.; Egg White Protein Extract Diagnostic-P. D. & Co.; Egg Yolk Protein Extract Diagnostic-P. D. & Co.; Eggplant Protein Extract Diagnostic-P. D. & Co.; English Walnut Protein Extract Diagnostic-P. D. & Co.; Fig Protein Extract Diagnostic-P. D. & Co.; Garlic Protein Extract Diagnostic-P. D. & Co.; Ginger Protein Extract Extract Diagnostic-P. D. & Co.; Goose Protein Extract Diagnostic-P. D. & Co.; Goose Feathers Protein Extract Diagnostic-P. D. & Co.; Grapefruit Protein Extract Diagnostic-P. D. & Co.; Guinea-hen Protein Extract Diagnostic-P. D. & Co.; Guinea Pig Hair Protein Extract Diagnostic-P. D. & Co.; Haddock Protein Extract Diagnostic-P. D. & Co.; Halibut Protein Extract Diagnostic-P. D. & Co.; Herring Protein Extract Diagnostic-P. D. & Co.; Hickory Nut Protein Extract Diagnostic-P. D. & Co.; Horse Hair Protein Extract Diagnostic-P. D. & Co.; Horse Serum Protein Extract Diagnostic-P. D. & Co.; Juniper Pollen Protein Extract Diagnostic-P. D. & Co.; Lamb Protein Extract Diagnostic-P. D. & Co.; Lemon Protein Extract Diagnostic-P. D. & Co.; Lettuce Protein Extract Diagnostic-P. D. & Co.; Lobster Protein Extract Diagnostic-P. D. & Co.; Mackerel Protein Extract Diagnostic-P. D. & Co.; Milk (cow's—all proteins) Protein Extract Diagnostic-P. D. & Co.; Milk (human) Protein Extract Diagnostic-P. D. & Co.; Mugwort (wormwood) Pollen Protein Extract Diagnostic-P. D. & Co.; Mustard Protein Extract Diagnostic-P. D. & Co.; Mutton Protein Extract Diagnostic-P. D. & Co.; Oat Pollen Protein Extract Diagnostic-P. D. & Co.; Orris Root Protein Extract Diagnostic-P. D. & Co.; Oatmeal Protein Extract Diagnostic-P. D. & Co.; Onion Protein Extract Diagnostic-P. D. & Co.; Orange Protein Extract Diagnostic-P. D. & Co.; Oyster Protein Extract Diagnostic-P. D. & Co.; Parsnip Protein Extract Diagnostic-P. D. & Co.; Pea Protein Extract Diagnostic-P. D. & Co.; Peach Protein Extract Diagnostic-P. D. & Co.; Peanut Protein Extract Diagnostic-P. D. & Co.; Pear Protein Extract Diagnostic-P. D. & Co.; Pecan Protein Extract Diagnostic-P. D. & Co.; Pepper (Sweet) Protein Extract Diagnostic-P. D. & Co.; Perch Protein Extract Diagnostic-P. D. & Co.; Pike Protein Extract Diagnostic-P. D. & Co.; Pineapple Protein Extract Diagnostic-P. D. & Co.; Paprika Protein Extract Diagnostic-P. D. & Co.; Plum Protein Extract Diagnostic-P. D. & Co.; Pork Protein Extract Diagnostic-P. D. & Co.; Prune Protein Extract Diagnostic-P. D. & Co.; Potato (Sweet) Protein Extract Diagnostic-P. D. & Co.; Potato (White) Protein Extract Diagnostic-P. D. & Co.; Pumpkin Protein Extract Diagnostic-P. D. & Co.; Rabbit Hair Protein Extract Diagnostic-P. D. & Co.; Radish Protein Extract Diagnostic-P. D. & Co.; Ragweed Pollen Protein Extract Diagnostic-P. D. & Co.; Raspberry Protein Extract Diagnostic-P. D. & Co.; Red Pepper Protein Extract Diagnostic-P. D. & Co.; Redtop Pollen Protein Extract Diagnostic-P. D. & Co.; Rhubarb Protein Extract Diagnostic-P. D. & Co.; Rice Protein Extract Diagnostic-P. D. & Co.; Russian Thistle Pollen Protein Extract Diagnostic-P. D. & Co.; Rye Protein Extract Diagnostic-P. D. & Co.; Rye Pollen Protein Extract Diagnostic-P. D. & Co.; Sage Protein Extract Diagnostic-P. D. & Co.; Salmon Protein Extract Diagnostic-P. D. & Co.; Scallop Protein Extract Diagnostic-P. D. & Co.; Shad Protein Extract Diagnostic-P. D. & Co.; Sheep Wool Protein Extract Diagnostic-P. D. & Co.; Shrimp Protein Extract Diagnostic-P. D. & Co.; Smelt

Protein Extract Diagnostic-P. D. & Co.; Sole Protein Extract Diagnostic-P. D. & Co.; Spinach Protein Extract Diagnostic-P. D. & Co.; Squab Protein Extract Diagnostic-P. D. & Co.; Squash Protein Extract Diagnostic-P. D. & Co.; Strawberry Protein Extract Diagnostic-P. D. & Co.; Tea Protein Extract Diagnostic-P. D. & Co.; Timothy Pollen Protein Extract Diagnostic-P. D. & Co.; Tomato Protein Extract Diagnostic-P. D. & Co.; Turkey Protein Extract Diagnostic-P. D. & Co.; Turnip Protein Extract Diagnostic-P. D. & Co.; Veal Protein Extract Diagnostic-P. D. & Co.; Watermelon Protein Extract Diagnostic-P. D. & Co.; Wheat Protein Extract Diagnostic-P. D. & Co. Parke, Davis & Co., Detroit.

Group Protein Extracts Diagnostic-P. D. & Co.—A mixture in equal proportions of two or more Protein Extracts Diagnostic-P. D. & Co. For a discussion of the actions, uses and dosage, see preceding article, Protein Mixtures for Diagnosis. Group Protein Extracts Diagnostic-P. D. & Co. are marketed in collapsible tubes containing sufficient material for fifty tests. The following products have been accepted: Protein Extracts Diagnostic-P. D. & Co. Group 1 (beef, lamb, pork, veal, mutton); Protein Extracts Diagnostic-P. D. & Co. Group 2 (milk—all proteins, egg—all proteins, cheese, human milk); Protein Extracts Diagnostic-P. D. & Co. Group 3 (codfish, haddock, halibut, herring, mackerel, smelt); Protein Extracts Diagnostic-P. D. & Co. Group 4 (perch, pike, salmon, bluefish, shad, sole); Protein Extracts Diagnostic-P. D. & Co. Group 5 (chicken, duck, goose, turkey, squab, guinea-hen); Protein Extracts Diagnostic-P. D. & Co. Group 6 (clam, oyster, shrimp, scallop, lobster, crab); Protein Extracts Diagnostic-P. D. & Co. Group 7 (white potato, sweet potato, beet, turnip, carrot); Protein Extracts Diagnostic-P. D. & Co. Group 9 (celery, asparagus, onion, eggplant, radish, garlic); Protein Extracts Diagnostic—P. D. & Co. Group 11 (pumpkin, squash, cucumber, sweet peppers, tomato, rhubarb); Protein Extract Diagnostic-P. D. & Co. Group 12 (chestnut, peanut, pecan, almond); Protein Extracts Diagnostic-P. D. & Co. Group 13 (black walnut, Brazil nut, English walnut, hickory nut, butternut); Protein Extracts Diagnostic-P. D. & Co. Group 14 (wheat, rye, buckwheat); Protein Extracts Diagnostic-P. D. & Co. Group 15 (rice, oatmeal, barley, corn); Protein Extracts Diagnostic-P. D. & Co. Group 16 (apple, pear, prune, plum, fig); Protein Extracts Diagnostic-P. D. & Co. Group 17 (cantaloupe, watermelon, peach, cherry, banana, pineapple); Protein Extracts Diagnostic-P. D. & Co. Group 18 (orange, lemon, grapefruit, strawberry, blackberry, raspberry); Protein Extracts Diagnostic-P. D. & Co. Group 19 (coffee, tea, cocoa); Protein Extracts Diagnostic-P. D. & Co. Group 24 (hair—cattle, hair—cat, hair—dog, hair—horse); Protein Extracts Diagnostic-P. D. & Co. Group 25 (hair — rabbit, hair — guinea-pig, wool — sheep); Protein Extracts Diagnostic-P. D. & Co. Group 26 (feathers—chicken, feathers — duck, feathers — goose); Protein Extracts Diagnostic-P. D. & Co. Group 27 (ginger, mustard, pepper—black, pepper—red, paprika, sage). Parke, Davis & Co., Detroit. (*Jour. A. M. A.*, Aug. 11, 1923, p. 477.)

Elixir of Luminal.—Each 4 cc. (one fluidrachm) contains 0.015 gm. (¼ grain) of luminal in a menstruum containing alcohol 20 per cent. For a discussion of the actions, uses and dosage of luminal, see New and Nonofficial Remedies, 1923, p. 63. Winthrop Chemical Co., New York.

PUBLISHER'S NOTE

DIGITALIS TINCTURES.

It is no longer necessary for the physician to take the chances on digitalis he had to take a few years ago. Then he could do no more than try it out on the patient. Now it is assayed by test on animals, and preserved by various devices, among which are the placing of the tincture in small amber-colored vials, the addition of carbon dioxide to prevent access of atmospheric oxygen, and the dating of the package.

Digitalis leaves vary greatly in their content of the active medicinal principle, and while a tincture made from leaves of any strength can be built up to standard by evaporation, a safer and better way is to use standardized leaves—leaves that have been shown by physiologic test to be so active that a tincture made from them by the usual method will not require any concentration.

At the same time it must be remembered that digitalis tinctures *will* go to pieces, gradually, and it is an advantage therefore to have the tincture above the U. S. P. standard to begin with.

All these conditions seem to be fully met in the special tincture of digitalis which the makers, Parke, Davis & Co., designate as Tincture No. 111, a recent addition to the P. D. & Co. list.